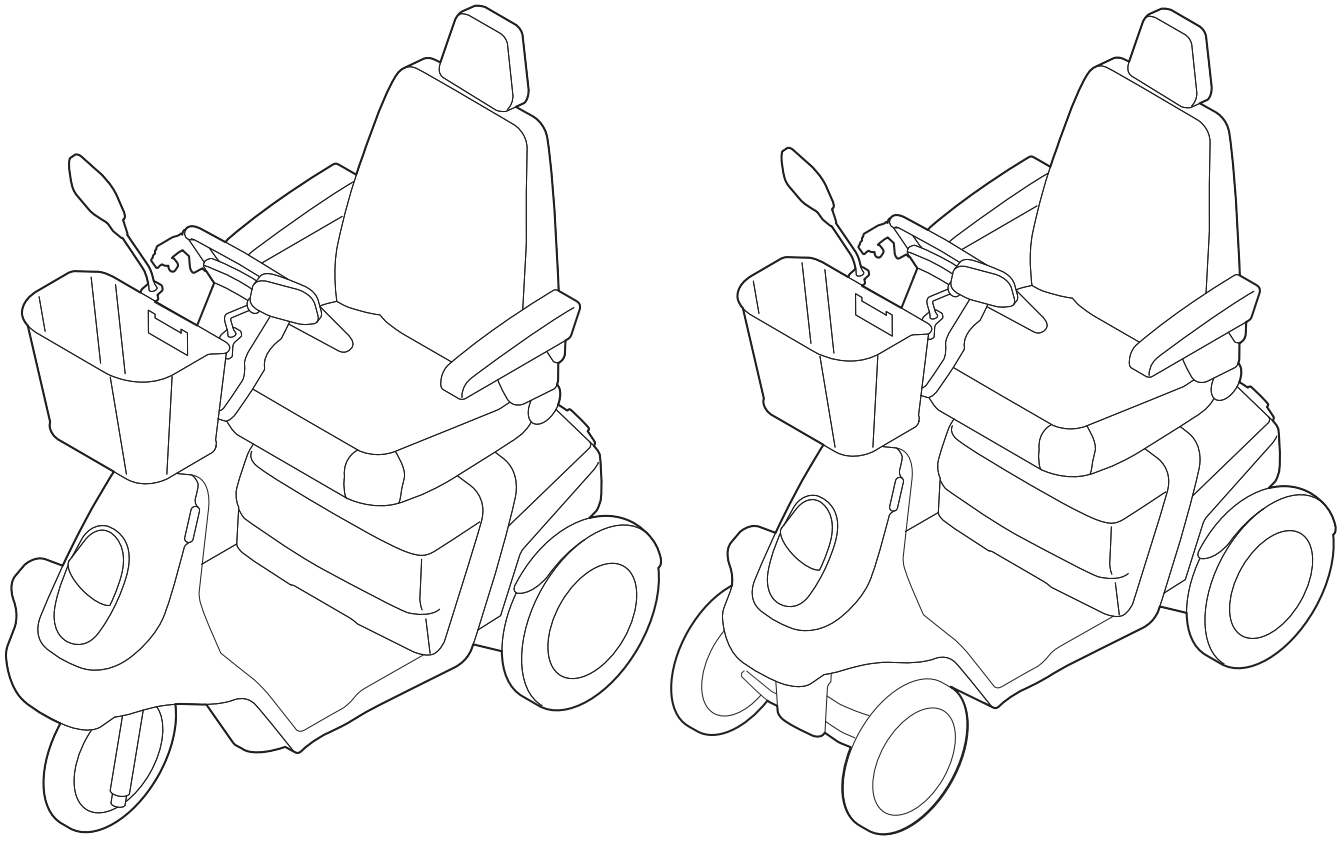
SERVICE MANUAL

TROPHY 20



CE

handicare

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1 Introduction Service manual Trophy 20

1.1 This manual

This manual contains the instructions for repairs and general maintenance of the Trophy 20 Scooter.
Mechanics who do repairs on this wheelchair must be well trained and familiar with the repair methods and the maintenance of the Trophy 20 scooter.
Always make sure that the work is carried out safely, particularly with respect to procedures requiring the scooter to be lifted up.
We advise that you contact our service department before doing repair work on a scooter that has been involved in an accident.
The following specifications are important when ordering parts:

- Model
- Year of manufacture
- Colour
- ID-number
- Part number
- Name of the part concerned

This information is provided on the identification plate. See 'Identification of the product'.

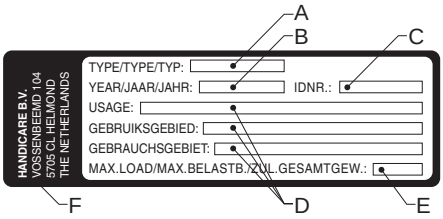
Available documentation
The following technical documentation is available / required to service this scooter:

- User manual
- Service manual

Service and technical support
For information concerning specific settings, maintenance or repair works please contact the Handicare Customer Service department. They are always prepared to help you. Ensure you have at hand:

- Model
- Year of manufacture
- ID-number

1.2 Identification of the product



The identification plate contains the following data:

A. Model
B. Year of manufacture
C. ID-number
D. Usage: indoor, outdoor or both
E. Maximum load in kg
F. Manufactures address

See for the location of the identification plate ´markings on the scooter´.

1.3 Symbols used in this manual

Note!
Pointing out possible problems to the user of this manual.

⚠ ***Caution!***
Advice for the user of this manual to prevent damage to the product.

⚠ ***Warning!***
Warnings for the user of this manual to prevent personal in jury.

Not following these instructions may result in physical injury, damage to the product or damage to the environment!

Reference symbol
When necessary this service manual refers to other manuals as shown below:
🕮 Battery charger: refers to the user manual of the battery charger
🕮 Scooter: refers to the general user manual of the Trophy 20

2 Safety

2.1 Personnel qualification

Repairs may only be carried out by trained and authorised service technicians.
During the execution of their work, they are at all times fully responsible for the fulfilment of locally applicable safety guidelines and standards.
Temporary employees and persons in training may only carry out repair and replacement work under the supervision of an authorised service technician.

2.2 Identification on the product

Safety
Safety information is indicated with the warning symbol.

⚠ ***Warning!***
Follow the instructions carefully next to these warning symbols! Not paying careful attention to these instructions could result in physical injury or damage to the scooter or the environment. Wherever possible, safety information is also provided in this manual in the relevant chapter.

2.3 Temperature

⚠ ***Warning!***
Avoid physical contact with the scooter's motor. The motor is continuously in motion during use and can reach high temperatures. After use, the motor will cool down slowly. Physical contact may cause burns.

Ensure that the scooter is not exposed to direct sunlight for extended periods of time. Certain parts of the scooter, such as the seat, the backrest, the armrests and the steering device become hot if exposed to the sun for too long. This may cause burns or skin irritation.

2.4 Electromagnetic radiation and interference

The scooter has been tested for compliance with the applicable requirements regarding electromagnetic radiation (EMC requirements).
The Trophy 20's immunity level is 20 volt/metre.

Note!
It cannot be excluded that electromagnetic radiation emanating from mobile telephones, medical apparatus and other sources, may have an influence on the scooter.

It cannot be excluded that the scooter will interfere with the electromagnetic fields of, for example, shop doors, burglar alarm systems and/or garage door openers.

In the unlikely event that such problems do occur, you are requested to notify your dealer immediately.

Powered wheelchairs and scooters can be affected by sources of radio waves, such as radio and TV transmitters, amateur radio stations, lifts, transmitting equipment, stereo radios and mobile telephones If the scooter's electronics are not well shielded, sensitive electrical devices, such as shop alarm systems and garage door openers, can be affected. The scooter has been tested for such interference. Please report any problems of this nature to your dealer immediately.

The following advices are intended to prevent the electric scooter from being driven unintentionally, which could lead to serious injury.

1. Do not turn on any manually controlled equipment for personal communication, such as a radio transmitter or mobile telephone, while the electric scooter is switched on.
2. Keep at a distance from transmitter equipment, such as radio and TV stations.
3. If the scooter starts making unintended movements, or if the brake goes into freewheel / neutral mode, turn off the powered wheelchair or scooter by removing the ignition key from the lock.
4. Be aware of the fact that any accessories, components or adaptations installed on the scooter may increase the effect of radio waves.

Note:
There is no easy way of testing the effects of radio waves on the general immunity of powered wheelchairs or scooters.

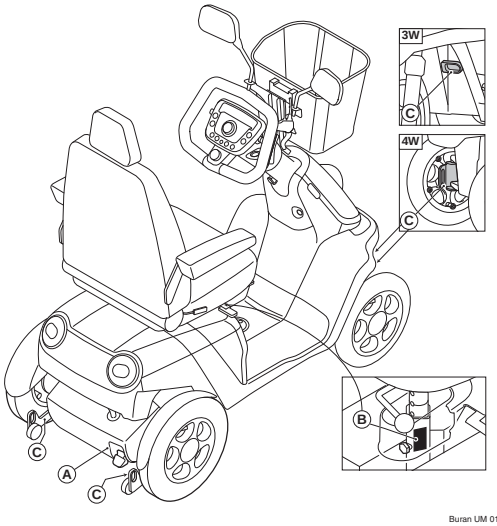
5. All cases of unintended movements of the scooter spontaneously going into freewheel / neutral mode should be reported to your dealer or to the scooter manufacturer. When reporting, please indicate whether a source of radio waves was nearby at the time.

2.5 Markings on the scooter

Never remove or cover up the markings, symbols and instructions affixed to the scooter. These safety measures must remain present and clearly legible throughout the entire lifestam of the scooter.

Replace or repair any markings, symbols or instructions that have become illegible or damaged immediately. Please contact your dealer for assistance.

Product labels
The following sticker/label can be found on the product:



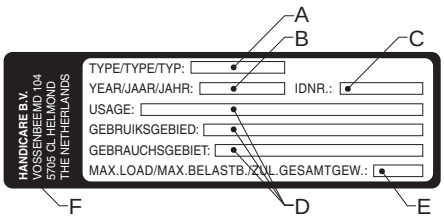
Buran UM 01

A. Freewheel handle position
B. Identification plate
C. Instruction for transportation

A. Freewheel handle position

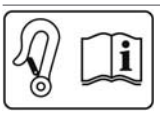
1. DRIVE mode: Lever fully upper position: Motor brake applied, scooter can not be pushed
2. FREEWHEEL / NEUTRAL mode: Lever lowest position: Motor brake not applied. Scooter can be pushed manually when electronics are off.

B. Identification plate



A. Model
B. Year of manufacture
C. ID-number
D. Usage: indoor, outdoor or both
E. Maximum load in kg
F. Manufactures address

C. Instruction for transportation (📖 Scooter)



Warning!
The scooter is not intended to be used as seat in motor vehicle.

2.6 Technical specifications

No changes may be made to the technical specifications.

2.7 Modifications / Adaptations

Modifications, not executed by Handicare, to components and electronics of this product are not permitted.

3 Tools

3.1 Tools

The tools below are needed for various mechanical settings and maintenance:

Quantity	Description	Size (mm)
1	Screwdriver, medium	5
1	Screwdriver, crosshead	-
1	Hammer (plastic)	-
1	Chaser	-
1	Circlip pliers	-
1	Ring spanner	7 / 10 / 11 / 13 / 17
1	Torque wrench	-
1	Socket	7 / 8 / 10 / 11 / 12 / 13 / 16 / 17
1	Socket bit	6
1	Allen key	3 / 4 / 5 / 6 / 8
1	Loctite	243
1	Shock absorber adjustment key	-

Use only high-quality tools for the adjustment(s) described.
Make sure that the hexagon of the spanner is attached securely to the hexagon of the fastening article. This prevents the 'rotation' of hexagons of fastening articles and spanners that may affect proper adjustment.

The following tools are needed for various electronic settings:

Quantity	Description	Function	
1	PG - pc programmer B-version	Adaptation of the drive programs and technical settings. Reading out the fault history	PR0210
1	PG - programmer unit SPIB handheld	Alternative device for PC. Adaptation of the drive programs and technical settings. Reading out the fault history	10237

4 Spare parts

4.1 Use of the parts lists

This document is meant as a reference book to be used to order parts for the scooter that is shown on the front cover.

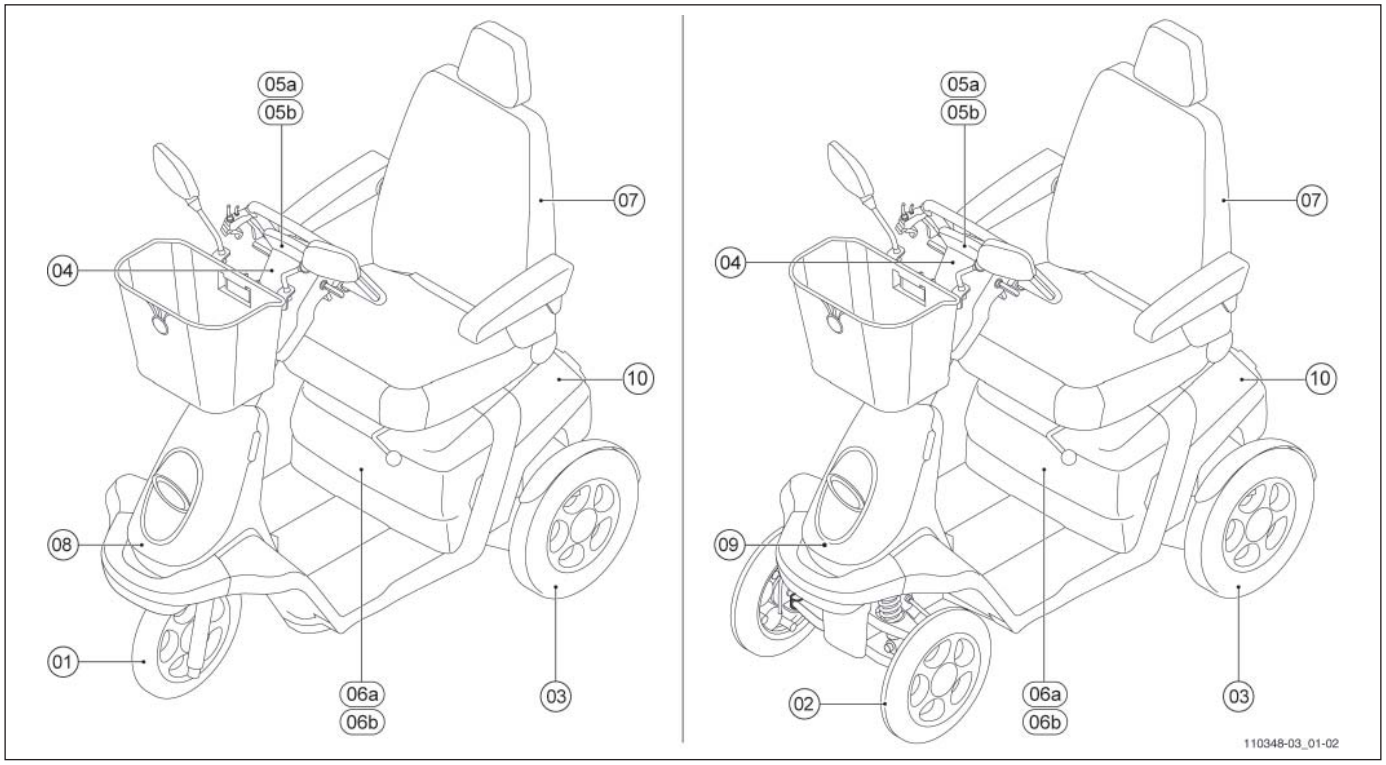
How to order
When ordering parts, please specify:
- ID-number (see the identification plate)
- Group (to which the relevant part belongs)
- Article number
- Number of parts required
- Description (in the relevant language)
- Dimensions (if applicable)

Remark
- If a part does not have a position number, it means that the part concerned cannot be purchased separately. The part concerned is part of the assembly shown. This assembly must be ordered as one piece. It has to be replaced in its entirety.
- Boxed position numbers refer to the relevant drawing.

Order address
Please mail or fax your orders to your supplier.

Service technicians
Repairs may only be carried out by trained and authorised service technicians. During the execution of their work they are at all times fully responsible for the fulfilment of locally applicable safety guidelines and standards.
Temporary employees and persons in training may only carry out repair and replacement work under the supervision of an authorised service technician.

4.2 Overview exploded views



Pos	Description	Page
01	Front frame, front fork and front wheel Trophy 20 3W	12
02	Front frame, front suspension and front wheels Trophy 20 4W	13
03	Rear frame, drive unit and rear wheels	14
04	Steering column, mirror and basket	16
05a	Console, printed circuit board and throttle control (ID-no PBxxxxx only)	18
05b	Console, printed circuit board and throttle control (ID-no QBxxxxx onwards)	20
06a	Wiring, electronics and batteries (ID-no PBxxxxx only)	22
06b	Wiring, electronics and batteries (ID-no QBxxxxx onwards)	23
07	Seat and seat post	24
08	Covers Trophy 20 3W	25
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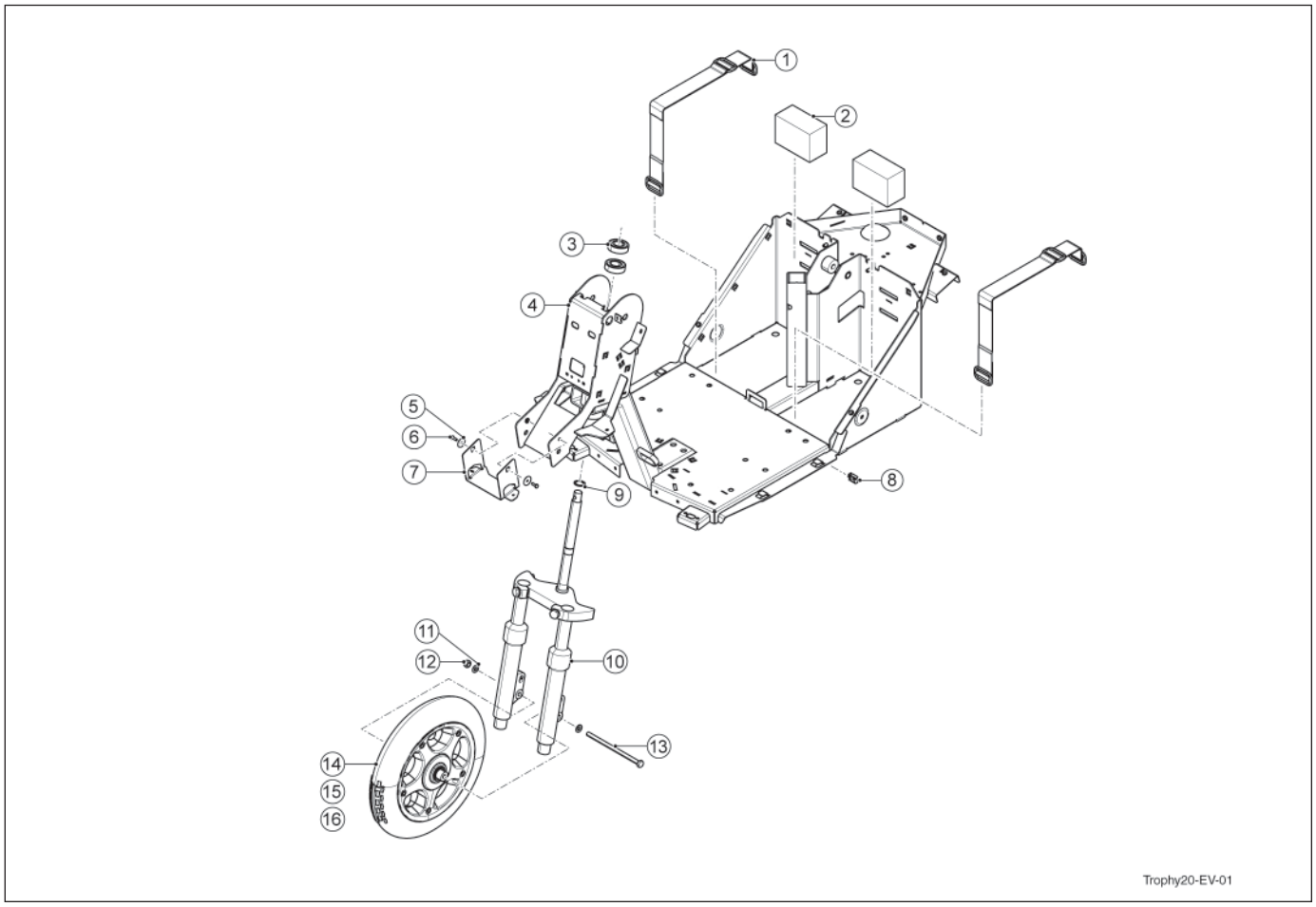
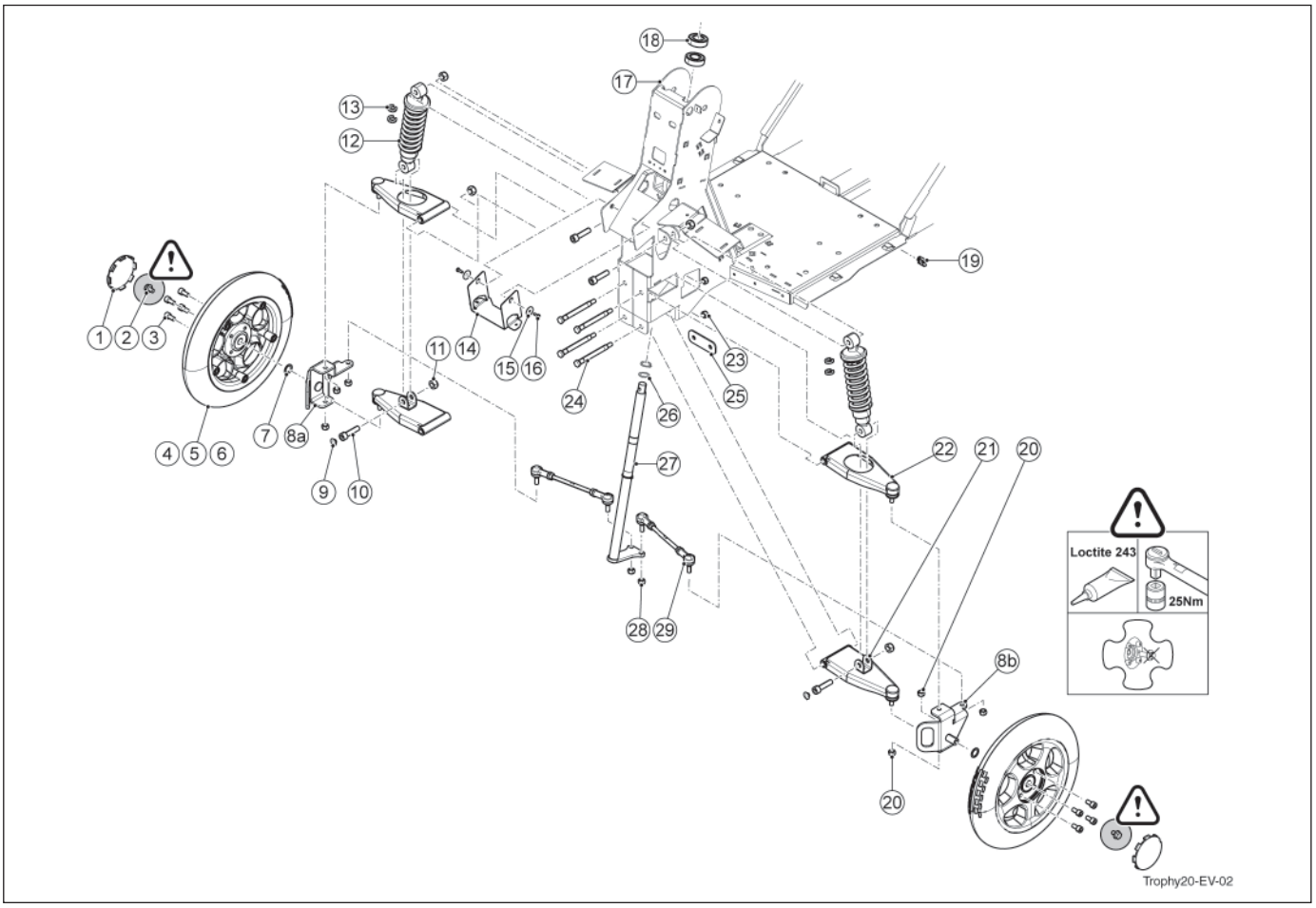
01 Front frame, front fork and front wheel Trophy 20 3W



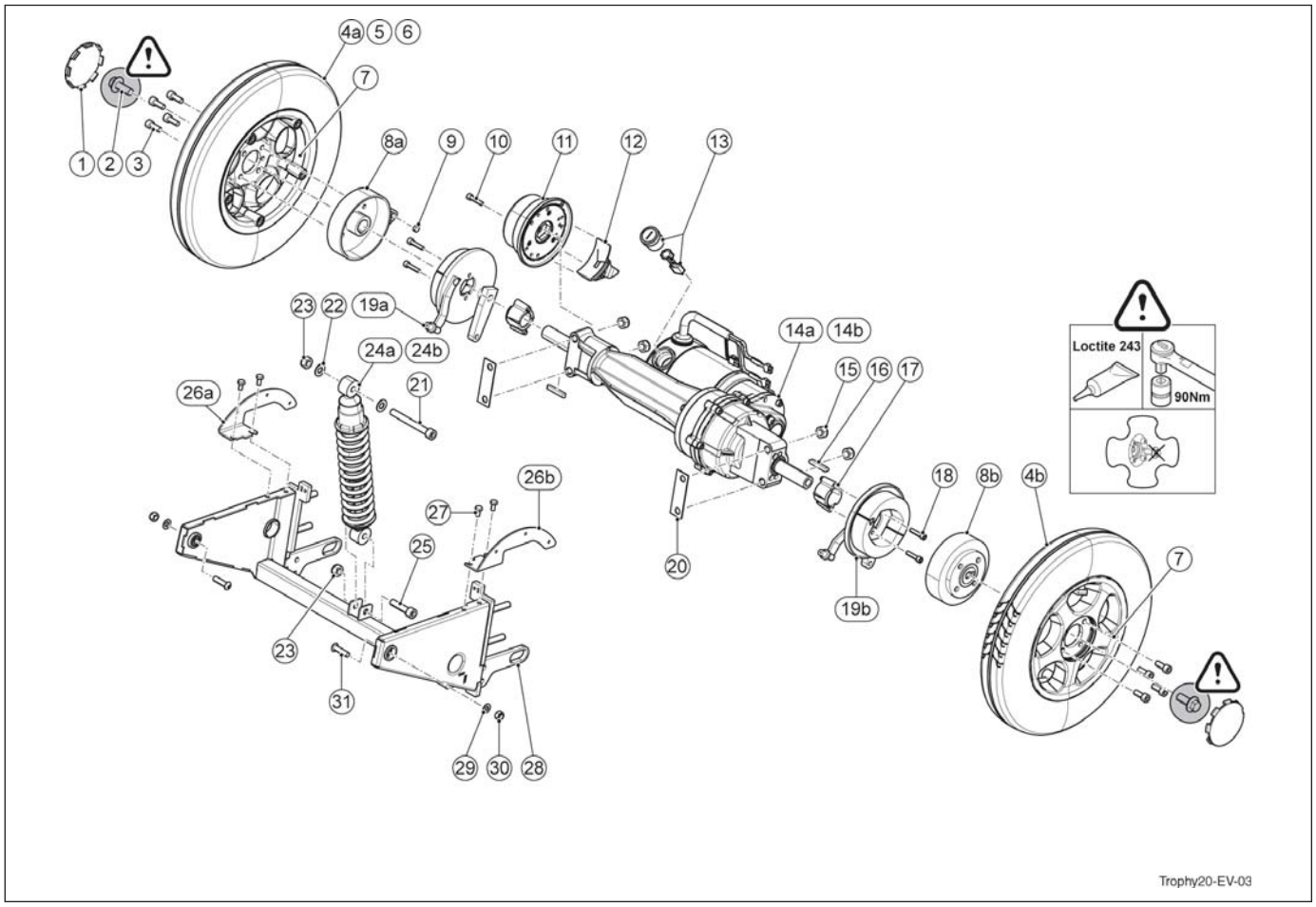
Pos	Qty	Article number	Description
1	2	9004420	Battery strap
2	2	00001.0008	Battery spacer block
3	2	9000493	Ball-head bearing 6004 2NSE
3,4	1	9003440	Frame with ball head bearings 3W
5	2	9006079	Washer flat M4x20x1,2
6	2	9005928	Haxagon bolt M4x12
7	1	9003444	Mounting bracket front cover
8	8	9005689	Cable clip
9	1	1001796	Retaining ring 20mm
10	1	9004153	Front fork
11	2	00000.2003	Washer flat M8
12	1	00000.1702	Lock nut M8
13	1	9002166	haxagon bolt M8x150 st10.9
14,15,16	1	9004159	front wheel 3W
15	1	15010.4100	Tube
16	1	9004161	Tyre

02 Front frame, front suspension and front wheels Trophy 20 4W



Pos	Qty	Article number	Description
1	2	9002006	Cover grey
2	2	9004569	Hexagon flange bolt M8x12 (torque 25Nm, use locktite 247)
3	8	00000.4026	Hexagon head cap screwM8x20
4,5,6	2	9004511	Front wheel 4W
5	2	15010.4100	Tube
6	2	9004161	Tyre
7	2	9001969	Shim ring 1.0mm 16x22mm D988
8a	1	9003408	Wheel bracket right
8b	1	9003406	Wheel bracket left
9	2	9002054	Cover hexagon head cap screw M10 black
10	4	1002242	Hexagon head cap screwM10x40
11	4	00000.1703	Lock nut M10
12,13	2	1012525	Assy Shock absorber front 4W
13	4	1002840	Skiffy fixation ring ø10mm
14	1	9003444	Mounting bracket front cover
15	2	9006079	Washer flat M4x20x1,2
16	2	9005928	Haxagon bolt M4x12
17,18	1	9003392	Frame with ball head bearings 4W
18	2	9000493	Ball-head bearing 6004ZZE
19	8	9005689	Cable clip
20	4	00000.1702	Lock nut M8
21	2	9004459	Swing arm lower assy
22	2	9004458	Swing arm top assy
23	4	00000.1702	Lock nut M8
24	4	9001803	Axle suspension parallel bracket
25	1	9001895	Mounting plate
26	1	1001796	Retaining ring 20mm
27	1	9003403	Steer shaft
28	4	00000.1702	Lock nut M8
28,29	2	1012524	Assy Steering bar

03 Rear frame, drive unit and rear wheels

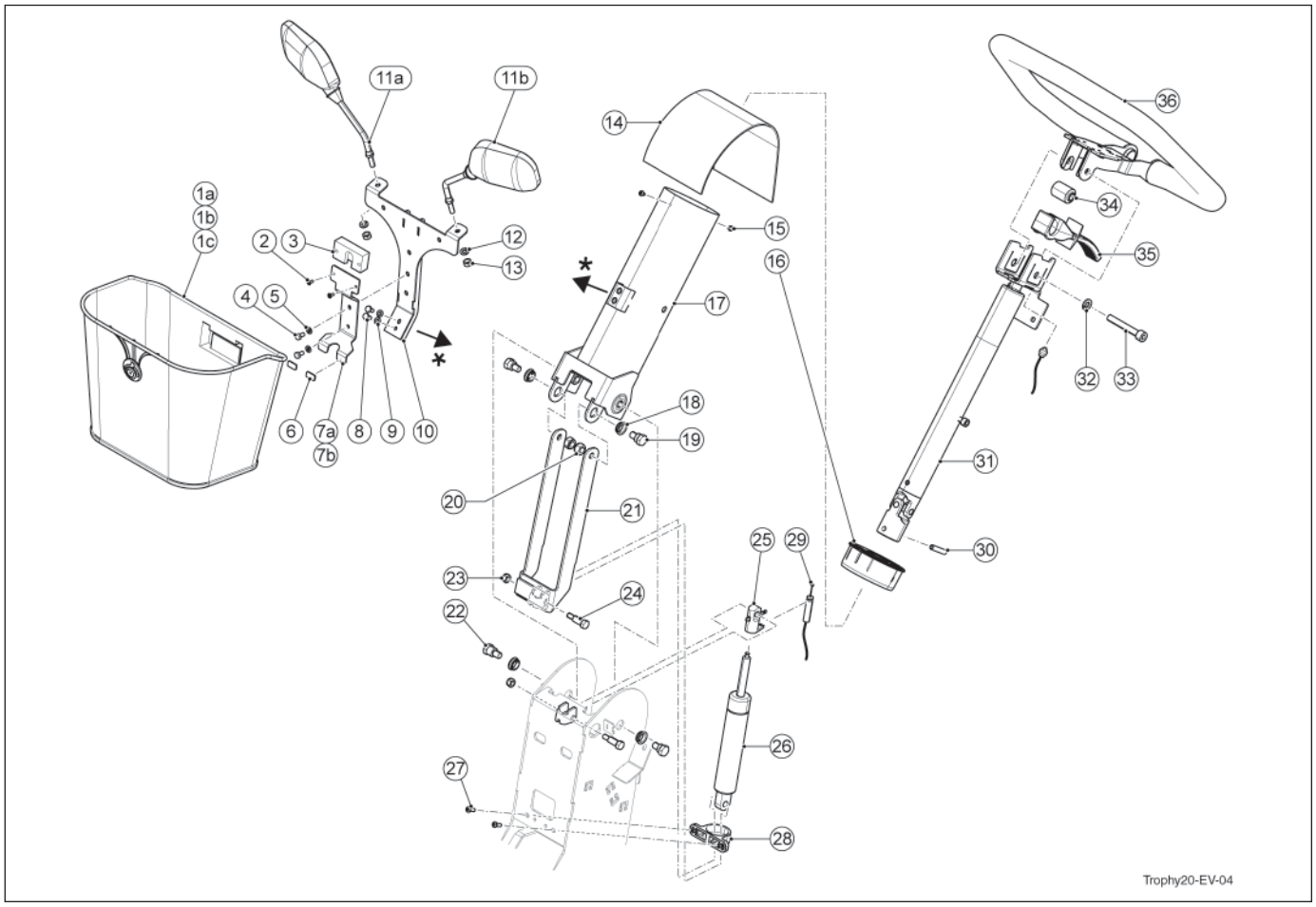


Pos	Qty	Article number	Description
1	2	9002006	Cover grey
2	2	1012527	Assy Wheel bolt
3	8	00000.4026	Hexagon head cap screwM8x20
4a,5,6	1	1014662	Rear wheel 8", right, black assy
4b,5,6	1	1014661	Rear wheel 8", left, black assy
5	2	1003249	Tube
6	2	9004146	Tyre
7	2	00001.1463	Sticker tire pressure 3,5 Bar
8a	1	9004143	Drum brake right
8b	1	9005853	Drumbrake left
9	1	9000642	Speed sensor magnet
10	1	9006080	Hexagon head cap screwM5x25
11	1	1012104	Motor brake
12	1	1012106	Free wheel lever
13	1	1012313	Carbon brushes with covers, set of 4
14a	1	1012529	Assy Transaxle Alpine (for S-Drive 120A)
14b	1	1012530	Assy Transaxle std
15	4	00000.1703	Lock nut M10
16	2	1012124	Key for transaxle
17	2	9004564	Brake mounting
18	4	00000.4004	Hexagon head cap screwM6x45
19a	1	9004142	Brake right
19b	1	9004141	Brake left
20	2	9000689	Rubber mounting strip
21	1	9006042	Hexagon head cap screwM10x85
22	2	00000.2004	Washer flat M10
23	2	00000.1703	Lock nut M10
24a	1	9000603	Shock absorber standard
24b	1	9000683	Shock absorber heavy duty

Continued from **03 Rear frame, drive unit and rear wheels**

Pos	Qty	Article number	Description
25	1	1002242	Hexagon head cap screwM10x40
26a	1	9004133	Fender mounting bracket right
26b	1	9004132	Fender mounting bracket left
27	4	00000.4307	Hexagon bolt M6x12
28	1	9003417	Rear frame
29	2	00000.2003	Washer flat M8
30	2	00000.1702	Lock nut M8
31	2	9002341	Button head screw M8x30

04 Steering column, mirror and basket

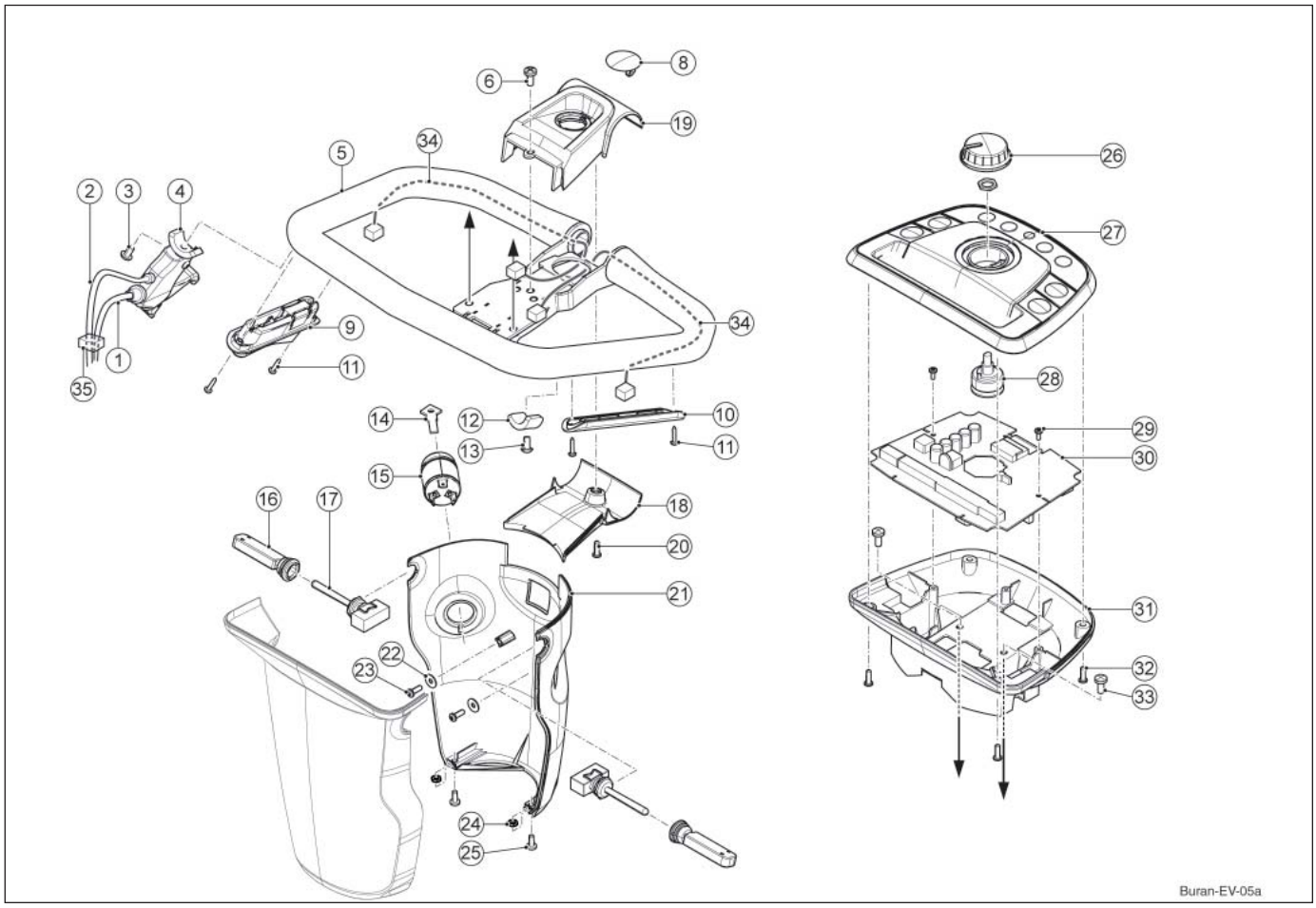


Pos	Qty	Article number	Description
1a	1	9001135	Basket, standard
1b	1	9006137	Basket, large (only without locking mechanism)
1c	1	9000703	Front Bag, (for std bracket with locking mechanism)
2	2	00000.3612	Screw M4x10
3	1	9000704	Basket holder
4	2	00000.4307	Hexagon bolt M6x12
5	2	00000.2202	Spring washer M6
6	2	9006129	Rubber strip
7a	1	9006128	Mounting bracket for std basket & bag (with locking mechanism)
7b	1	9006130	Mounting bracket for large basket (without locking mechanism)
8	2	00000.4307	Hexagon bolt M6x12
9	2	00000.2202	Spring washer M6
10	1	9006544	Mounting bracket for mirrors
11a	1	1009250	Mirror left
11b	1	1009251	Mirror right
12	2	00000.2203	Spring washer M8
13	2	00000.1502	Hexagon nut M8
14	1	9004126	Cover plate, steering adjustment
15	2	9002792	Screw Ejot K30x6
16	1	1012531	Assy Tiller bearing
17	1	9004169	Cylinder, steering column
18	4	9004174	Bush bearing tiller
19	3	9004163	Hinge pin 12x5,2 M8
20	2	00000.1702	Lock nut M8
21	1	9004181	Bracket steering adjustment
22	1	9004164	Hinge pin 12x8 M8
23	2	00000.1701	Lock nut M6
24	2	9004493	Hinge pin 8x16 M6
25	1	9007360	Gas spring operating mechanism

Continued from **04 Steering column, mirror and basket**

Pos	Qty	Article number	Description
26	1	9007359	Gas spring 300N
27	2	9005802	Screw Ejot K40x12
28	1	1012532	Assy Slider Gas-spring
29	1	9006559	Gas spring actuator cable
30	1	9005607	Spiral pin heavy duty 6x32
31	1	9004175	Steering column adjustment tube
32	1	00000.2203	Spring washer M8
33	1	00000.4041	Hexagon head cap screwM8x55
34	1	9004190	Spacer
35	1	9004191	Handle steering adjustment
36	1	9004185	Steering wheel, see 05a and 05b

05a Console, printed circuit board and throttle control (ID-no PBxxxxx only)

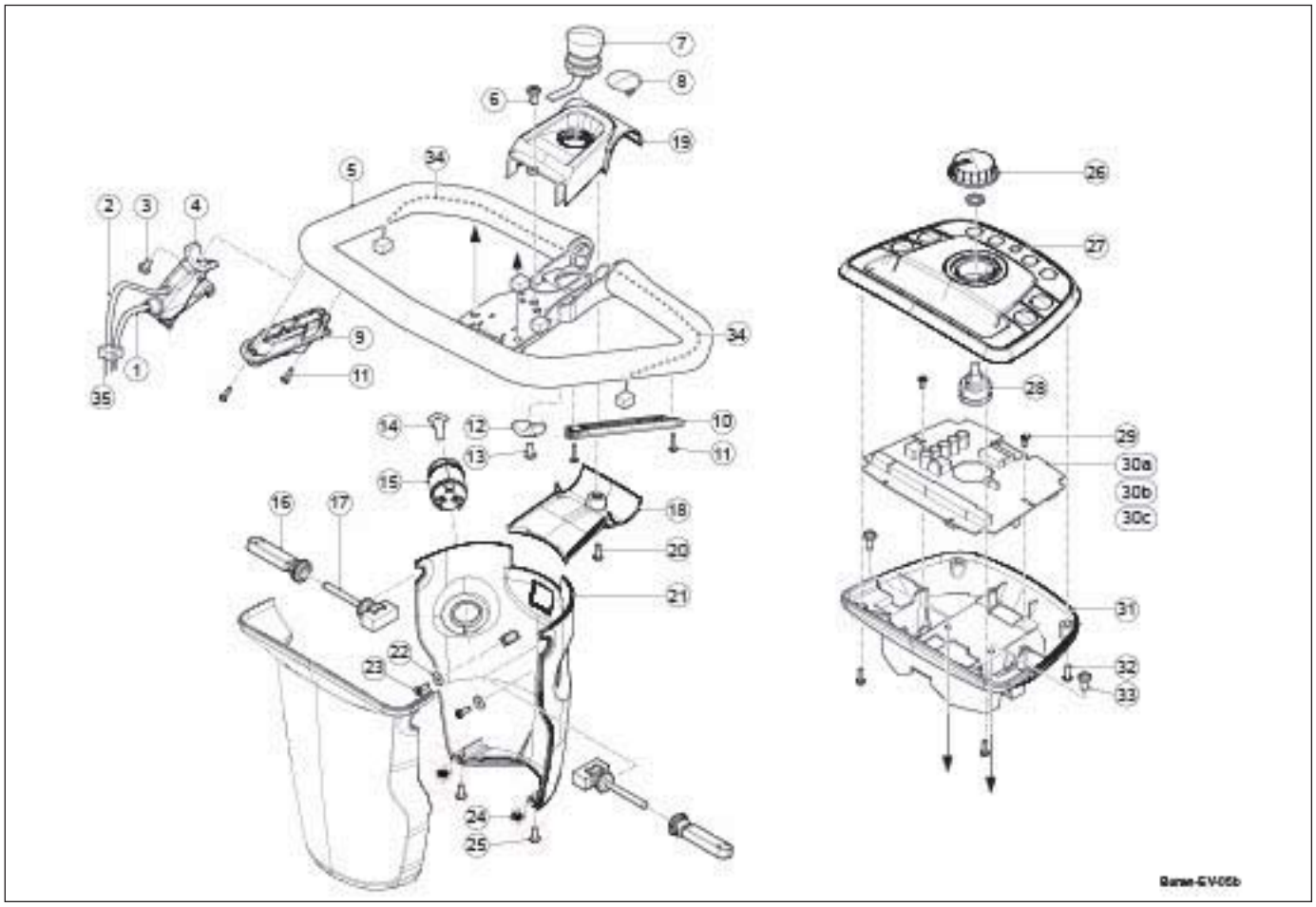


Pos	Qty	Article number	Description
1	1	9004425	Drumbrake actuator cable
2	1	9006191	Extension cable for microswitch
3	1	00000.3719	Buttonhead screw M5x10
4	1	9004330	Brake lever
5	1	9004185	Steering wheel
6	1	00000.3200	Recessed buttonhead screw M5x12
8	1	9000904	Stop switch dummy
9	2	1008055	Throttle potentiometer
10	1	9007423	Cover steering wheel
11	4	00000.3307	Sheet-metal screw 2.9x13
12	1	9004331	Cover brake position
13	1	00000.3719	Buttonhead screw M5x10
14	1	9005810	Ignition key
15	1	9006111	Ignition switch
16	2	9004303	Cover for indicator switch
17	2	9006106	Indicator switch
18	1	9004302	Steering wheel cover bottom
19	1	9004301	Steering wheel cover top
20	1	9005802	Srew Ejot K40x12
21	1	9004197	Rear cover steering column
22	2	00000.2106	Washer flat M4 3xD
23	2	9005802	Screw Ejot K40x12
24	2	00000.1662	Hexagon Nut thin M4
25	2	00000.3218	Recessed buttonhead screw M4x12
26	1	1012536	Assy Dashboard speed knob
27	1	9007365	Assy top
28	1	9006110	Speed switch
29	3	1001730	Screw Ejot K30x10
30	1	9007265	Tiller PCB

Continued from **05a Console, printed circuit board and throttle control (ID-no PBxxxxx only)**

Pos	Qty	Article number	Description
31	1	9007223	Console bottom
32	4	9005802	Srew Ejot K40x12
33	2	00000.3200	Recessed buttonhead screw M5x12
34	1	9004641	Throttle harness
35	5	1015323	Cable clips (set 25)

05b Console, printed circuit board and throttle control (ID-no QBxxxxx onwards)



Pos	Qty	Article number	Description
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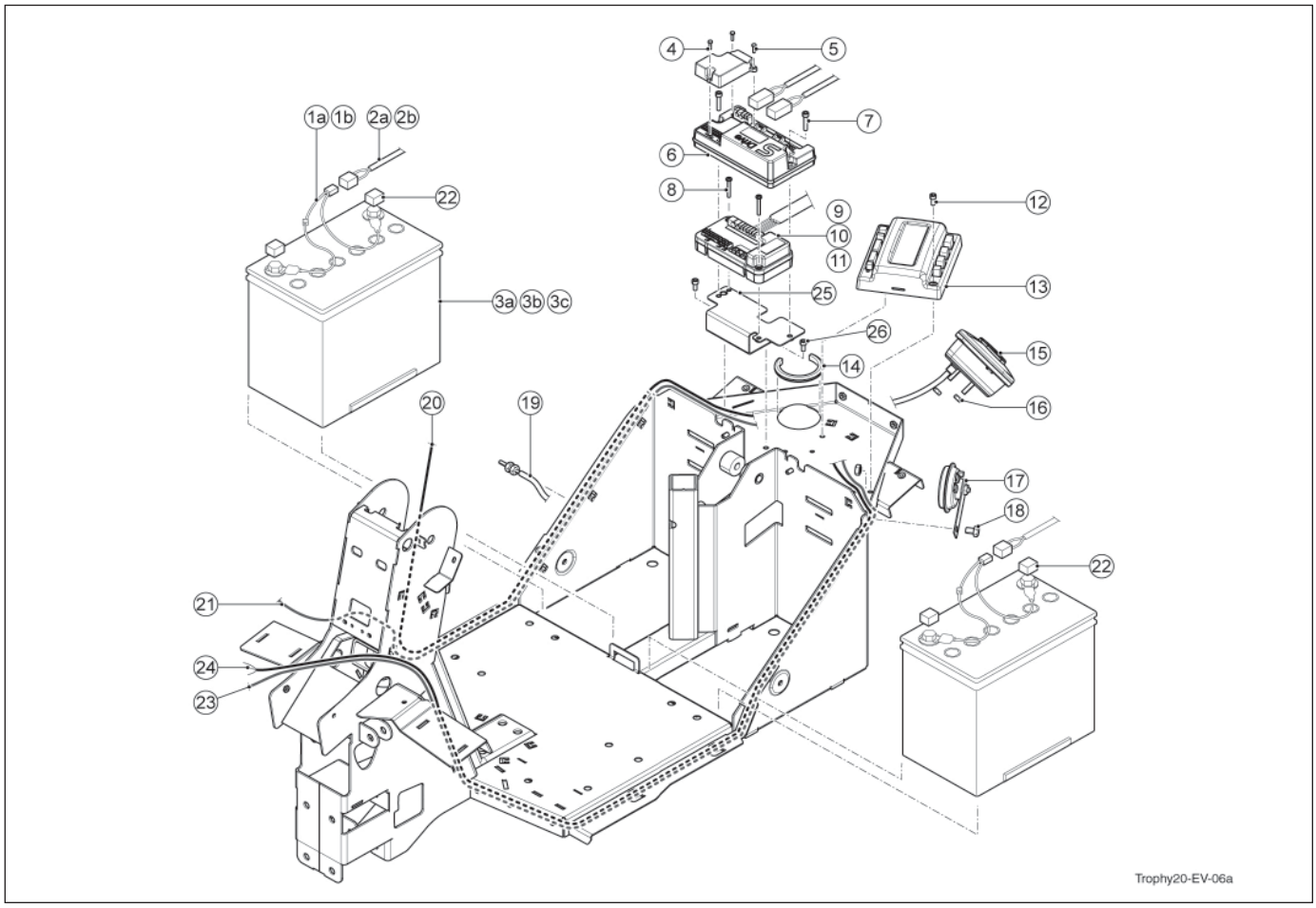
3	1	00000.3719	Buttonhead screw M5x10
4	1	9004330	Brake lever
5	1	9004185	Steering wheel
6	1	00000.3200	Recessed buttonhead screw M5x12
7	1	9006138	Stop switch
8	1	9000904	Stop switch dummy
9	2	1008055	Throttle potentiometer
10	1	9007423	Cover steering wheel
11	4	00000.3307	Sheet-metal screw 2.9x13
12	1	9004331	Cover brake position
13	1	00000.3719	Buttonhead screw M5x10
14	1	9005810	Ignition key
15	1	9004432	Ignition switch
16	2	9004303	Cover for indicator switch
17	2	9004435	Indicator switch
18	1	9004302	Steering wheel cover bottom
19	1	9004301	Steering wheel cover top
20	1	9005802	Srew Ejot K40x12
21	1	9004197	Rear cover steering column
22	2	00000.2106	Washer flat M4 3xD
23	2	9005802	Screw Ejot K40x12
24	2	00000.1662	Hexagon Nut thin M4
25	2	00000.3218	Recessed buttonhead screw M4x12
26	1	1012536	Assy Dashboard speed knob
27	1	1012535	Assy top
28	1	9004438	Speed switch
29	3	1001730	Screw Ejot K30x10

Continued from **05b Console, printed circuit board and throttle control (ID-no QBxxxxx onwards)**

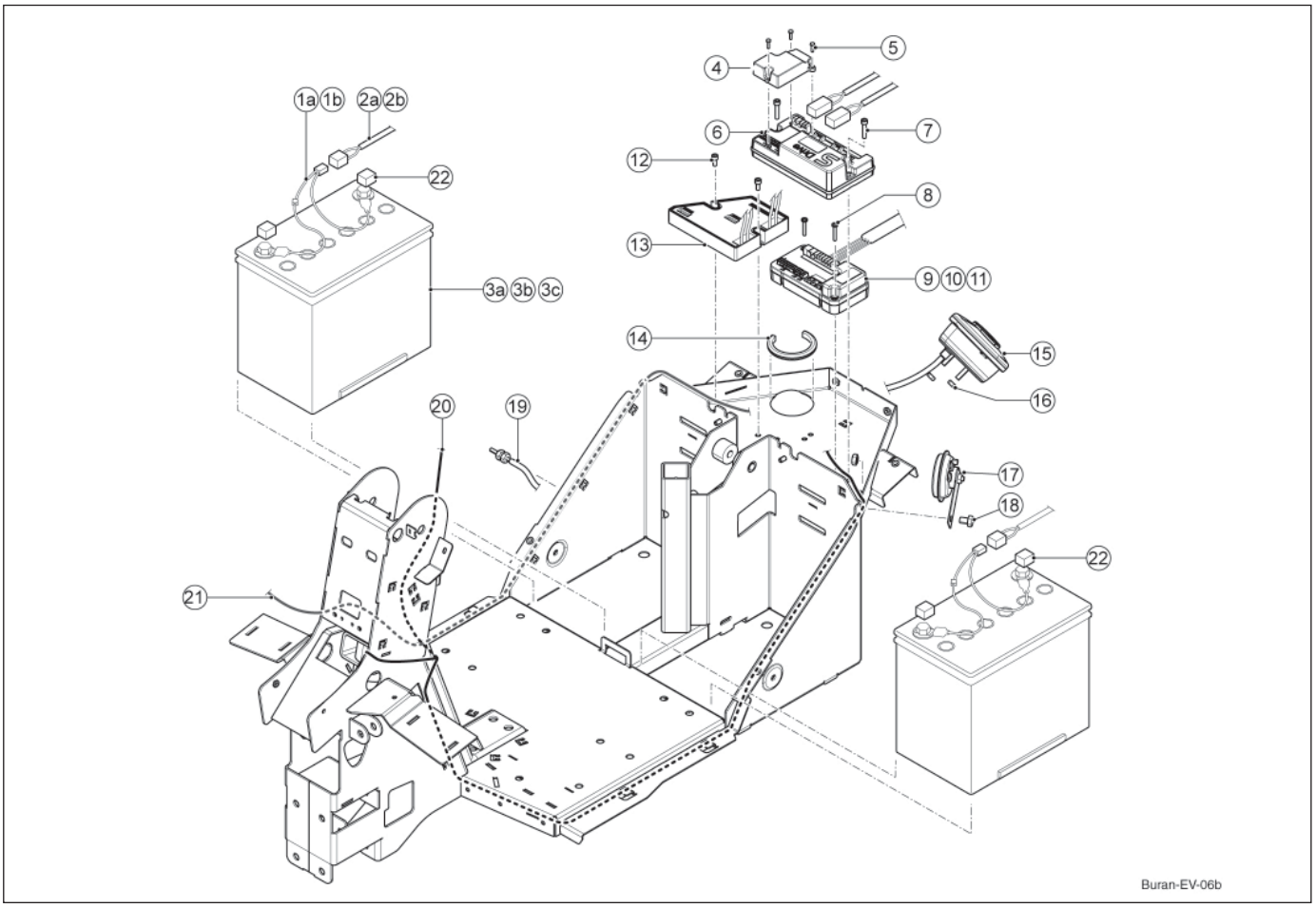
Pos	Qty	Article number	Description
30a	1	9007572	Tiller PCB Basic
30b	1	9007374	Tiller PCB Dual control
30c	1	9007373	Tiller PCB Full option
31	1	9007223	Console bottom
32	4	9005802	Screw Ejot K40x12
33	2	00000.3200	Recessed buttonhead screw M5x12
34	2	9004641	Throttle harness
35	5	1015323	Cable clips (set 25)
-	1	9007372	Full option steering wheel

06a Wiring, electronics and batteries (ID-no PBxxxxx only)



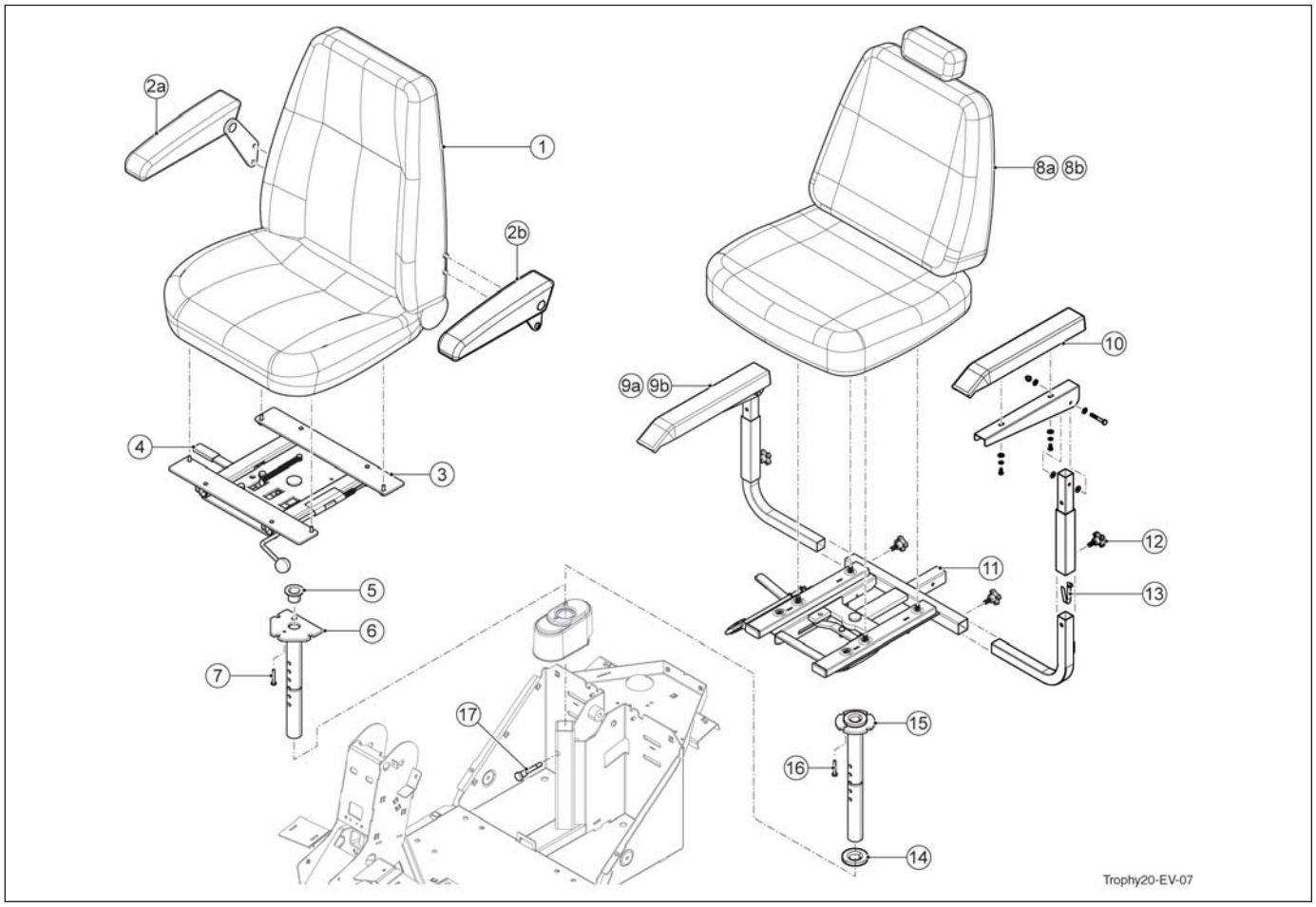
Pos	Qty	Article number	Description
1a	2	9006563	Battery harness 60A
1b	2	9006564	Battery harness 100A
2a	1	9006097	Power harness S-Drive 90A
2b	1	9006101	Power harness S-Drive 120A (for Alpine Transaxle)
3a	2	9002758	Battery (34Ah C5) (40Ah C20)
3b	2	9002759	Battery (50Ah C5) (60Ah C20)
3c	2	9002760	Battery (63Ah C5) (74Ah C20)
4,5	1	1012412	Connector cover S-Drive 120A
4,5,6	1	9002457	S-drive controller 120A (for Alpine Transaxle)
7	2	9006080	Hexagon head cap screwM5x25
8	2	00000.3212	Recessed buttonhead screw M4x25
9,10	1	1015385	Connector cover S-drive 90A
9,10,11	1	1015386	S-drive controller 90A
12	2	1007078	Hexagon head cap screw M5x16
13	1	1002558	Controller interface
14	1	9006124	Tule
15	2	9004503	Rear light LED
16	4	00000.1501	Hexagon nut M6
17	1	9006105	Horn
18	1	00000.4322	Hexagon bolt M8x12
19	1	9004431	Speed sensor
20	1	9006095	Main harness
21	1	9004419	Charging harness
22	2	9002752	Set battery connection covers
23	1	9006096	Lighting harness
24	1	9006193	Brake switch extension harness
25	1	9005911	Mounting bracket for S-drve controller
26	2	00000.4036	Hexagon head cap screwM5x12

06b Wiring, electronics and batteries (ID-no QBxxxxx onwards)



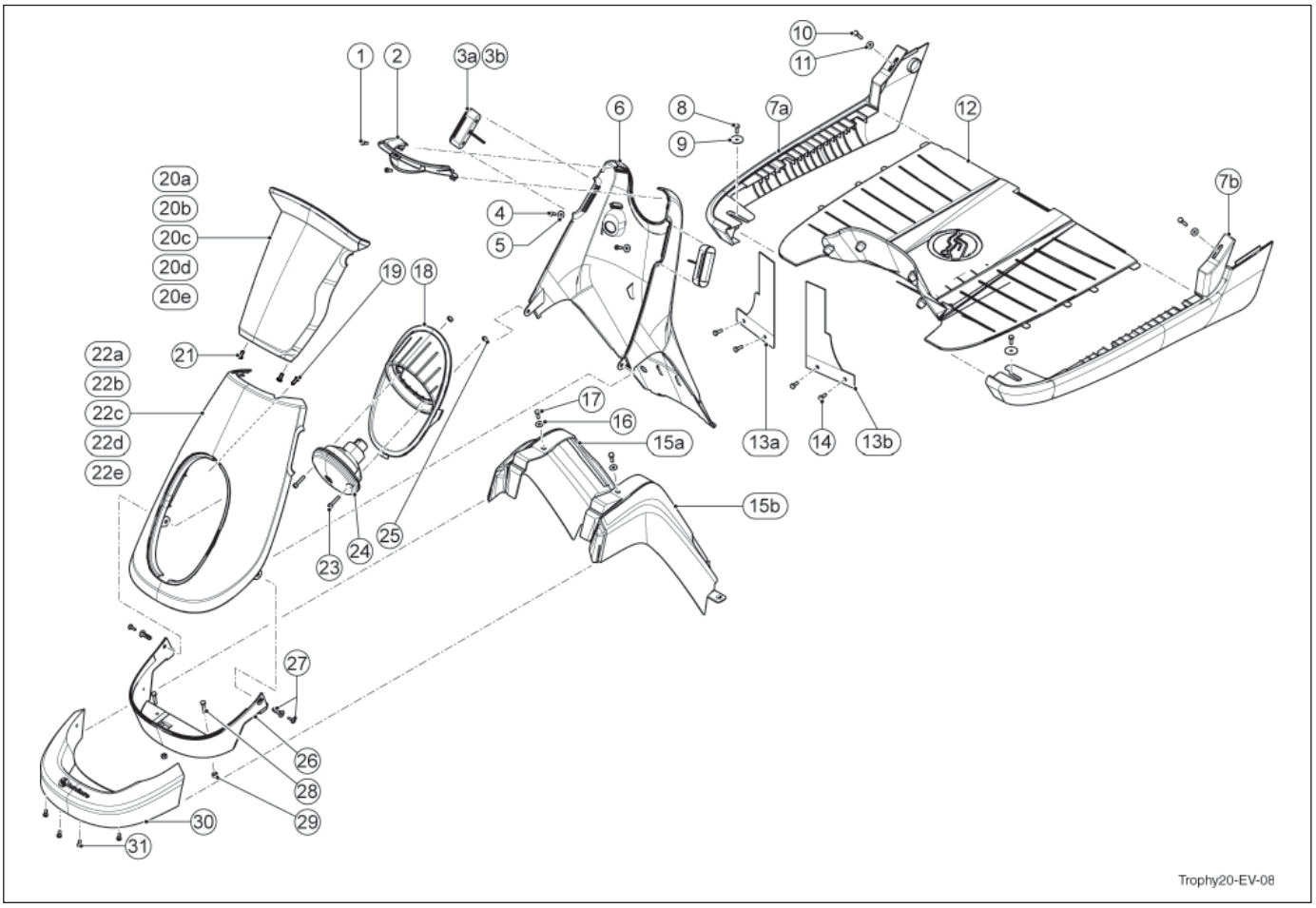
Pos	Qty	Article number	Description
1a	2	9006563	Battery harness 60A
1b	2	9006564	Battery Harness 100A
2a	1	9006562	Power harness S-Drive 90A
2b	1	9006561	Power harness S-Drive 120A
3a	2	9002759	Battery (50Ah C5) (60Ah C20)
3b	2	9002760	Battery (63Ah C5) (74Ah C20)
3c	2	9002761	Battery (72Ah C5) (86Ah C20)
4,5	1	1012412	Connector cover
4,5,6	1	9002457	S-drive controller 120A
7	2	9006080	Hexagon head cap screw M5x25
8	2	00000.3212	Recessed buttonhead screw M4x25
9,10	1	1015385	Connector cover S-drive 90A
9,10,11	1	1015386	S-drive controller 90A
12	2	00000.4036	Hexagon head cap screw M5x12
13	1	9004430	Controller interface
14	1	9006124	Tule
15	2	9004503	Rear light LED
16	4	00000.1501	Hexagon nut M6
17	1	9004433	Horn
18	1	00000.4322	Hexagon bolt M8x12
19	1	9004431	Speed sensor
20	1	9004429	Main harness
21	1	9004419	Charging harness
22	2	9002752	Set battery connection covers

07 Seat and seat post



Pos	Qty	Article number	Description
1,2a,2b	1	1002861	Master seat with armrests
2a	1	118.00221.000	Armrest right, Master seat
2b	1	118.00231.000	Armrest left, Master seat
3,4	1	9000034	Seat frame with slider, Master seat
4	1	9000042	Seat fixation strip, Master seat
5	1	9000933	Nylon bearing seat post, Master seat
6	1	1012523	Assy Seat post std
7	1	00000.3723	Button head screw M6x8
8a	1	1008995	Captain seat standard
8b	1	1009244	Captain seat with high back
9a	1	1008999	Armrest right, Captain seat
9b	1	1008998	Armrest left, Captain seat
10	2	232103	Armrest pad PU, Captain seat
11	1	1008996	Seat frame with slider, Captain seat
12	4	229001	Thumb screw
13	2	1009001	Detent button
14	1	9006157	Ring seat post cover
15	1	1012520	Assy seat post Captain seat incl. nylon bearing
16	1	00000.3716	Button head screw M6x16
17	1	9005156	Seat post bolt

08 Covers Trophy 20 3W

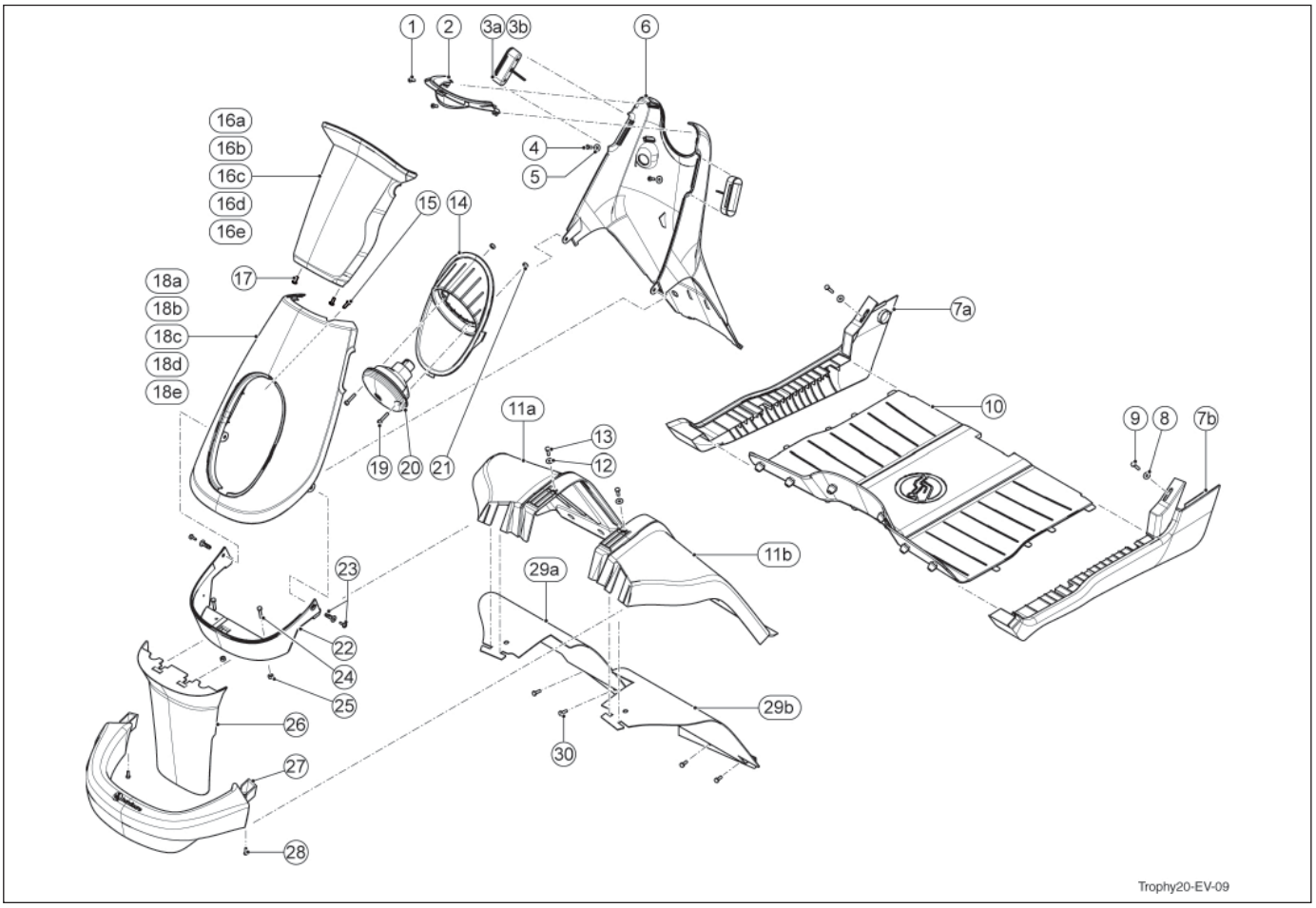


Pos	Qty	Article number	Description
1	2	9005802	Screw EJOT K40x12
2	1	9003458	Front cover upper part
3a	2	9006094	Indicator 12V (ID-no PBxxxxx only)
3b	2	9003478	Indicator 24V (ID-no QBxxxxx onwards)
4	2	9005802	Screw EJOT K40x12
5	2	00000.2106	Washer flat M4 3xD
6	1	9003460	Front cover rear part
7a	1	9003475	Side skirt right 3W
7b	1	9003474	Side skirt left 3W
8	2	9005928	Hexagon bolt M4x12
9	2	9006079	Washer flat M4x20
10	2	9005927	Hexagon bolt M4x20
11	2	00000.2106	Washer flat M4 3xD
12	1	9003476	Floormat 3W
13a	1	9004571	Front inner fender right 3W
13b	1	9004570	Front inner fender left 3W
14	4	9005928	Hexagon bolt M4x12
15a	1	9003473	Front fender right 3W
15b	1	9003472	Front fender left 3W
16	2	00000.2106	Washer flat M4 3xD
17	2	9005928	Hexagon bolt M4x12
18	1	9003457	Head light cover
19	1	9005802	Screw EJOT K40x12
20a	1	9004442	Front tiller cover Ruby red metalic
20b	1	9004445	Front tiller cover Platinum white metalic
20c	1	9004448	Front tiller cover Sparkling champagne metalic
20d	1	9004451	Front tiller cover Graphite black metalic
20e	1	9004454	Front tiller cover Moonstone blue metalic
21	2	00000.3218	Recessed buttonhead screw M4x12

Continued from **08 Seat and seat post**

Pos	Qty	Article number	Description
22a	1	1015363	Front cover Ruby red metalic
22b	1	1015364	Front cover Platinum white metalic
22c	1	1015365	Front cover Sparkling champagne metalic
22d	1	1015366	Front cover Graphite black metalic
22e	1	1015367	Front cover Moonstone blue metalic
23	2	00000.4060	Hexagon head cap screwM4x20
24	1	9004428	Head light
25	2	00000.1507	Hexagon nut M6
26	1	9003459	Front cover bottom
27	2	9004652	Push rivet
28	2	9005927	Hexagon bolt M4x20
29	2	00000.1507	Hexagon nut M6
30	1	1015454	Front bumper 3W
31	4	9005802	Screw EJOT K40x12

09 Covers Trophy 20 4W

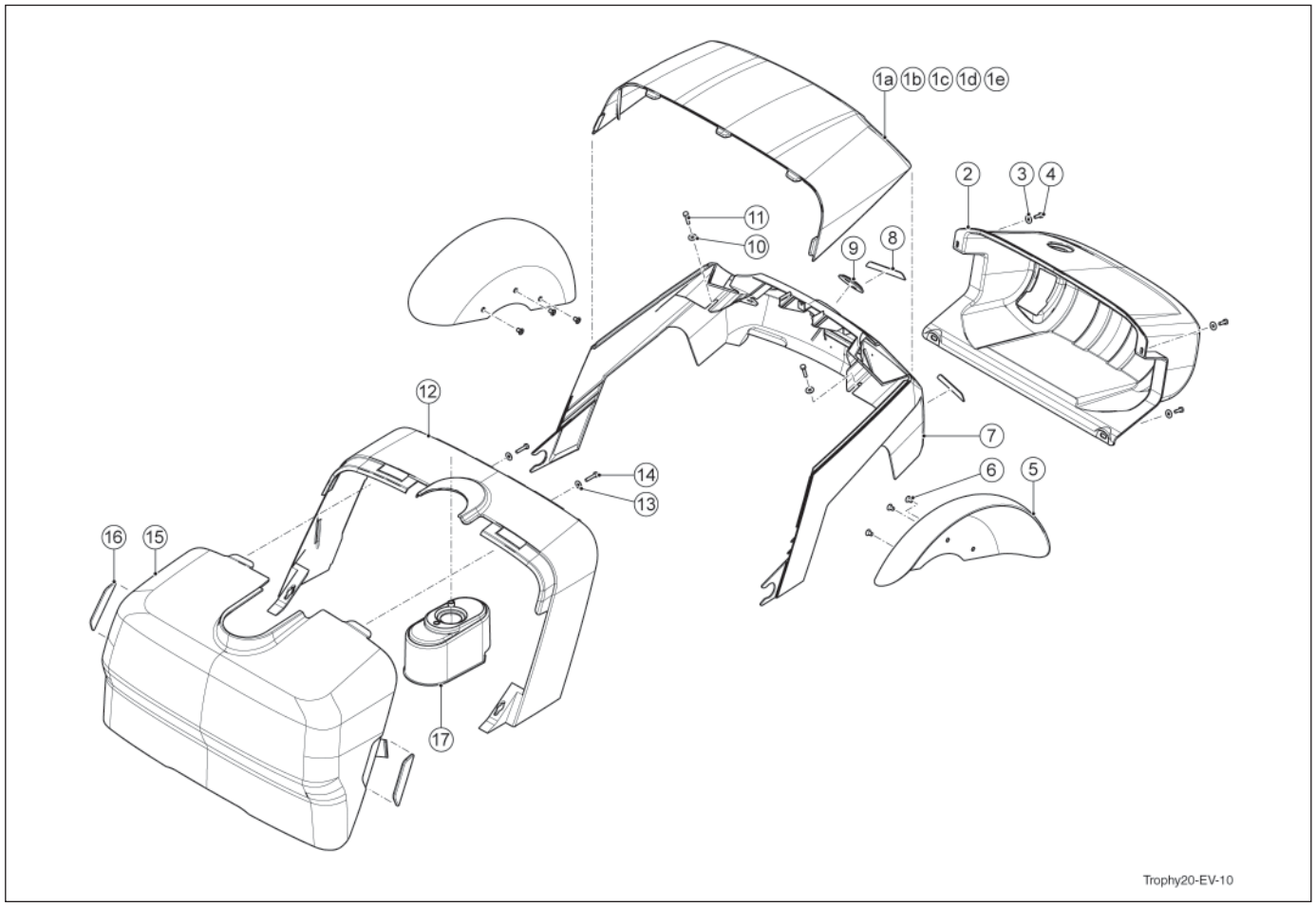


Pos	Qty	Article number	Description
1	2	9005802	Screw EJOT K40x12
2	1	9003458	Front cover upper part
3a	2	9006094	Indicator 12V (ID-no PBxxxxx only)
3b	2	9003478	Indicator 24V (ID-no QBxxxxx onwards)
4	2	9005802	Screw EJOT K40x12
5	2	00000.2106	Washer flat M4 3xD
6	1	9003460	Front cover rear part
7a	1	9003467	Side skirt right 4W
7b	1	9003466	Side skirt left 4W
8	2	00000.2106	Washer flat M4 3xD
9	2	9005927	Hexagon bolt M4x20
10	1	9003468	Floormat 4W
11a	1	9003465	Front fender right 4W
11b	1	9003464	Front fender left 4W
12	2	00000.2106	Washer flat M4 3xD
13	2	9005928	Hexagon bolt M4x12
14	1	9003457	Head light cover
15	1	9005802	Screw EJOT K40x12
16a	1	9004442	Front tiller cover Ruby red metalic
16b	1	9004445	Front tiller cover Platinum white metalic
16c	1	9004448	Front tiller cover Sparkling champagne metalic
16d	1	9004451	Front tiller cover Graphite black metalic
16e	1	9004454	Front tiller cover Moonstone blue metalic
17	2	00000.3218	Recessed buttonhead screw M4x12
18a	1	1015363	Front cover Ruby red metalic
18b	1	1015364	Front cover Platinum white metalic
18c	1	1015365	Front cover Sparkling champagne metalic
18d	1	1015366	Front cover Graphite black metalic
18e	1	1015367	Front cover Moonstone blue metalic

Continued from **09 Covers Trophy 20 4W**

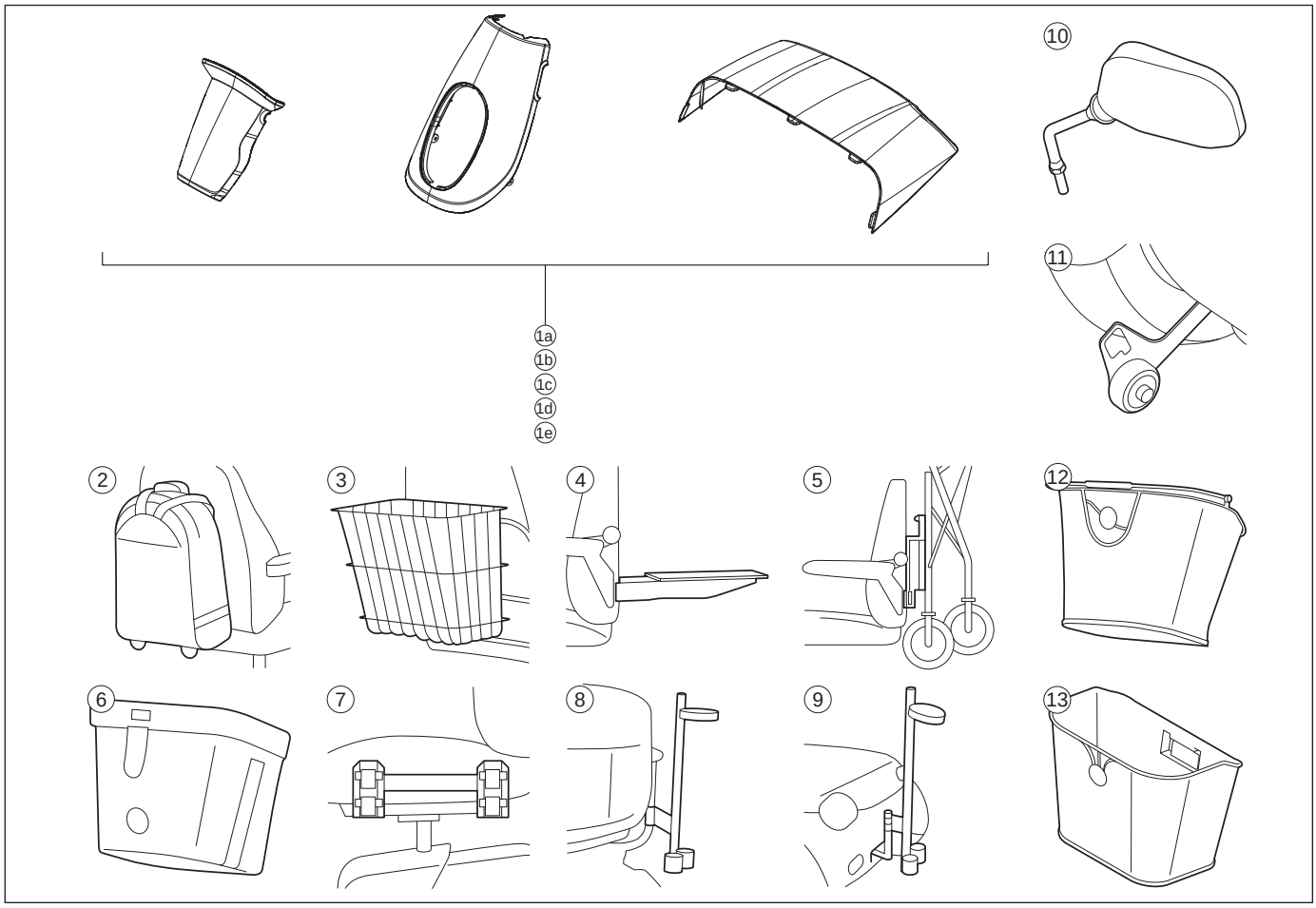
Pos	Qty	Article number	Description
19	2	00000.4060	Hexagon head cap screwM4x20
20	1	9004428	Head light
21	2	00000.1507	Hexagon nut M6
22	1	9003459	Front cover bottom
23	2	9004652	Push rivet
24	2	9005927	Hexagon bolt M4x20
25	2	00000.1507	Hexagon nut M6
26	1	9003469	Front spoiler
27	1	9003470	Front bumper 4W
28	2	9005802	Screw EJOT K40x12
29a	1	9004573	Front inner fender right 4W
29b	1	9004572	Front inner fender left 4W
30	4	9005928	Hexagon bolt M4x12

10 Covers common



Pos	Qty	Article number	Description
1a	1	1012537	Assy Rear cover Ruby red metalic
1b	1	1012538	Assy Rear cover Platinum white metalic
1c	1	1012539	Assy Rear cover Sparkling champagne metalic
1d	1	1012540	Assy Rear cover Graphite black metalic
1e	1	1012541	Assy Rear cover Moonstone blue metalic
2	1	9004129	Motor cover
3	4	00000.2106	Washer flat M4 3xD
4	4	9005927	Hexagon bolt M4x20
5	2	1012526	Assy Rear fender
6	6	00000.3624	Screw M5x8
7,8,9	1	1012521	Assy Rear bumper
8	2	9003480	Reflector red
9	1	1012522	Assy Logo button Handicare
10	2	00000.2106	Washer flat M4 3xD
11	2	9005927	Hexagon bolt M4x20
12	1	9003462	Frame cover
13	2	00000.2106	Washer flat M4 3xD
14	2	9005927	Hexagon bolt M4x20
15	1	1012516	Assy Battery cover
16	2	9003479	Reflector orange
17	1	1012519	Assy Seat post cover

4.3 Options



Pos	Qty	Article number	Description
1a,1b,1c,1d,1e		1012429	Colour exchange set Graphite black metalic (3 covers)
1a,1b,1c,1d,1e		1012430	Colour exchange set Moonstone blue metalic (3 covers)
1a,1b,1c,1d,1e		1012431	Colour exchange set Ruby red metalic (3 covers)
1a,1b,1c,1d,1e		1012432	Colour exchange set Sparkling champagne metalic (3 covers)
1a,1b,1c,1d,1e		1012433	Colour exchange set Platinum white metalic (3 covers)
-		1008572	Assy foot throttle (ID-no PBxxxxx only)
-		9007499	Assy foot throttle (ID-no QBxxxxx onwards)
2		9000701	Trolleybag
3		4930	Rear Basket
-		9000620	Mounting bracket rear
4		1001813	Luggage carrier
5		1001814	Walking aid holder
6		9000703	Front bag (for std bracket with locking mechanism)
7		1003095	Cane holder mounted to chair, horizontal
8		2537	Cane holder mounted to chair, vertical
9		1012515	Cane holder mounted to chassis
10		1009251	Mirror right
11		1015401	Anti tip set
-		9000825	Adjustmenttool for rear spring
12		9001135	Basket, standard
13		9006137	Basket, large (only without locking mechanism)
-		1015507	Lap strap with roll-up for Master Seat

5 Service instructions

This document is a reference book to be used to order parts for the scooter model shown on the front cover.

5.1 Maintenance plan

Below, we have indicated what needs to be checked, how often this should be done and by whom.

Time	Description	To be carried out by	
		User	Dealer
Daily	Charging the batteries, after each use	x	-
Weekly	Checking the tyre pressures	x	-
Monthly	Cleaning the scooter	x	-
	Cleaning the upholstery (if necessary)	x	-
Every three months	Grease the seat's swivel mechanism: the seat needs to be removed for this. See 'Removing the seat'. Lithium grease is recommended	x	x (Annually)
Annually	Inspecting the electrical system	-	x
	Checking the batteries	-	x
	Inspecting the drive. (see 7.6)	-	x
	Inspecting the mechanical parts	-	x
	Inspecting the bearings	-	x
	Inspecting the suspension	-	x
	Checking the tyres	-	x
	Checking all fastenings and bolts: tighten if necessary	-	x
	Sign the inspection record table in the user manual	-	x

It is recommended that the dealer carries out a service on the scooter at least once a year. If the scooter is used intensively, the service should be carried out every six months.

Maintenance requirement for re-use
Disinfect surfaces with commercially available disinfectants and clean the surfaces with damp cloths and cleaners tuned.

⚠ ***Warning***
Do not use high pressure cleaners or similar to clean the product!

The following work most be carried out before re-use:

	Annual inspection						
	1	2	3	4	5	6	7
Electronics							
On / off switch							
Output connector							
Operation							
Brake							
Programmable settings							
Batteries							
Level							
Connections							
Capacity test							
Wheels and tyres							
Tread depth							
Pressure							
Bearings							
Wheel fixing nuts							
Motors							
Cables							
Noise							
Connections							
Brake							
Brushes							

	Annual inspection						
	1	2	3	4	5	6	7
Chassis							
Condition							
Steering							
Seating							
Seat							
Backrest							
Armrests							
Electrical							
Harnesses							
Connections							
Lighting system							
Test							
Forwards							
Backwards							
Emergency stop							
Left turn							
Right turn							
Uphill / downhill							
Obstacle							
Brake							
List of necessary repairs:							

⚠ ***Warning***
Pull the charge cable out of the battery charging connection of the scooter before carrying out any maintenance on the scooter.

5.2 Batteries

Always follow the instructions related to battery maintenance & storage as given by the battery manufacturer (🕮 Battery charger).

The scooter is equipped with gel batteries. These batteries are fully encased and sealed and require no maintenance. A sticker indicates how the batteries are to be connected. This sticker is located on the rear cover and on the battery cable.

⚠ ***Warning***
Ensure that the batteries are always well charged.

Do not use the scooter if the batteries are almost flat. Doing so may damage the batteries and means you run the risk of coming to an unexpected standstill.

Ensure that the batteries are never completely flat. This can seriously damage the batteries and shorten their lifespan.

Only use gel-batteries

Replacing the batteries
If battery capacity is so low (after fully charging) that the scooter can only make short trips, or can not be driven at all, then the batteries have reached the end of their lifespan. Replace the batteries as soon as possible.

⚠ ***Warning***
Once the new batteries have been put in place they will need to be charged and 'run in' (🕮 Battery charger)

For the correct way to dispose of batteries see (🕮 Scooter) 'Used scooters and the environment'

Cleaning the batteries
Gel batteries are maintenance-free. However, attention may be paid to the following matters:

Note!
Ensure that the batteries remain clean and dry: dirt and water can cause leaks, as a result of which battery capacity can be reduced.

Clean the battery terminals and then grease them using acid-free Vaseline.

5.3 Tyres

To ensure that your scooter performs well, it is of great importance for the tyres to be kept at the right pressure.

Inflating the tyres
The tyres are equipped with a car tyre valve. Remove the caps from the valves before inflating the tyres. If the tyres are not adequately inflated, the range of the scooter may be reduced and the tread may wear more quickly.

⚠ ***Warning***
When inflating tyres, never exceed the maximum recommended tyre pressure which is stated on the tyres (2.5 bar front and 3.5 bar rear).

Never forget to replace the valve cap after inflating the tyres. The valve cap prevents dirt and sand from getting into the valve.
See the ‘Maintenance table’ regarding tyre checks.

5.4 Assembly, replacement and adjustment instructions

This chapter covers illustrated assembly, replacement and adjustment instructions.
Every separate visual instruction is prefaced with:
- Preparations
- Instructions (suggestions and advice to help you carry out tasks or procedures more easily)
- Notices (extra notes covering information you need when executing the specific task)
- Relevant article numbers
- Tools used

The tools for the specific task are illustrated in the visual instructions.

5.4.1 Front frame 3W

Replacing the front wheel and fork

Preparation
- Switch off the scooter with the ignition key.
- Use a lifting device to raise the scooter clear of the ground.

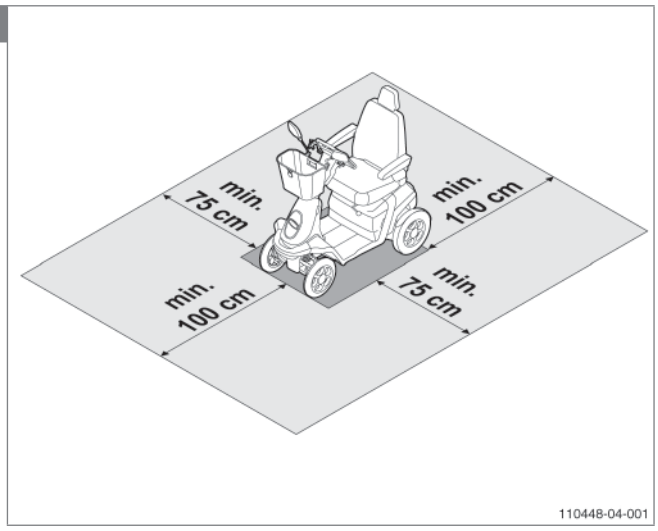
Instructions
The following operations are required to replace the front fork 3W:
- Remove the front cover and the front cover rear part.
- Remove the retaining ring and spiral pin.
- Remove the complete fork with wheel.
- Remove the hexagon nut, washer and bolt to take out the wheel.
- Replace the new front fork 3W.
- Rebuild the scooter in the reverse order.

Notice
- Some parts need to be replaced; the replacement is indicated by a symbol.
- Some operations have to be carried out by two persons; this is indicated by a symbol.

Relevant article numbers
- 9004153 Front fork

Tools used
- Torque wrench, socket, 13 mm
- Screw driver, crosshead
- Hammer (plastic)
- Chaser
- Circlip pliers
- Open ended spanner, 13 mm

1



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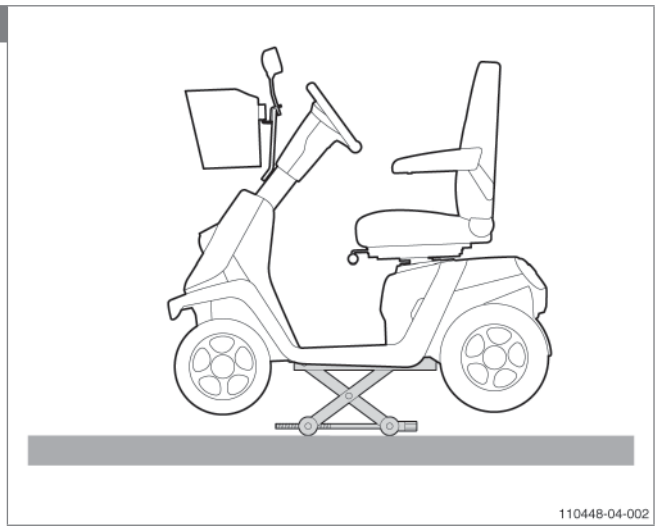

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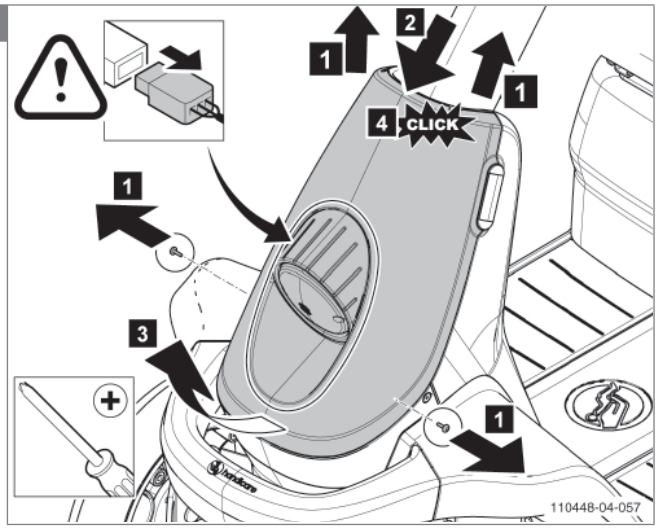

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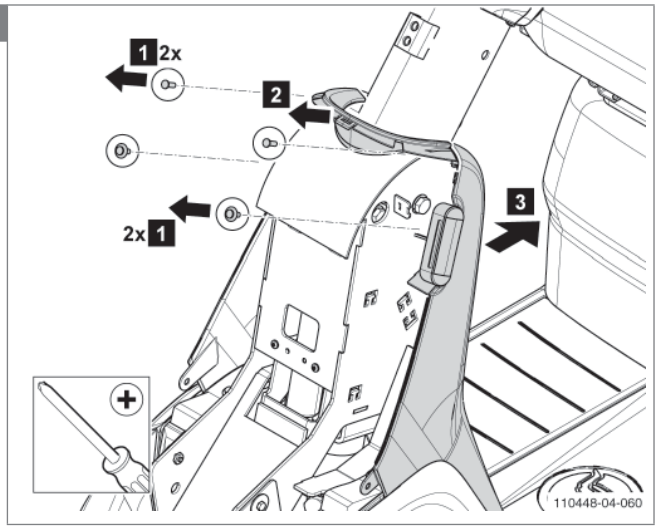

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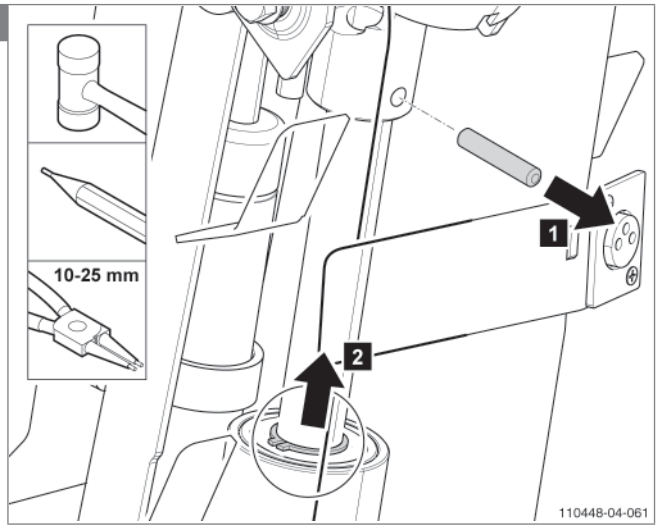
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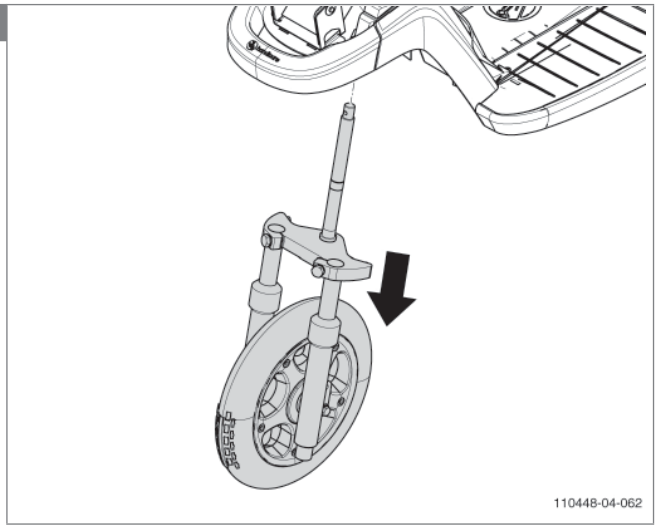
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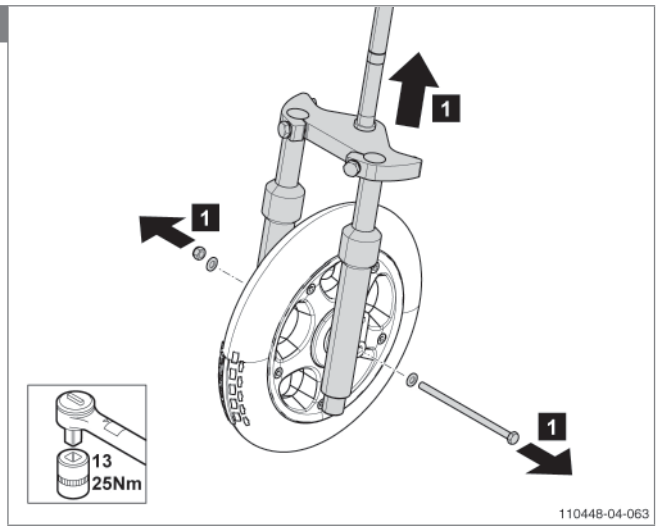
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5.4.2 Front frame 4W

Replacing the front wheel

Preparation
- Switch off the scooter with the ignition key.
- Use a lifting device to raise the scooter clear of the ground.

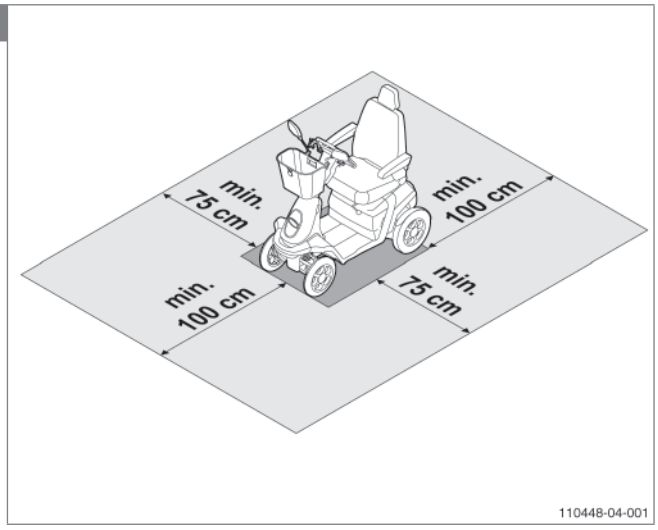
Instructions
The following operations are required to replace the front wheel:
- Remove the cover and the four hexagon screws to remove the front wheel.
- Mount the new front wheel in the reverse order.

Relevant article numbers
- 9004511 Front wheel 4W

Tools used
- Screwdriver, medium
- Torque wrench, socket bit, 6 mm

Notice
- N.a.

1



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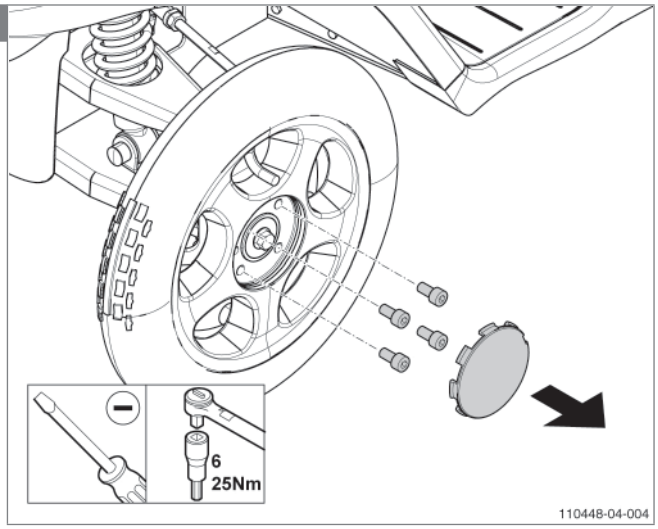

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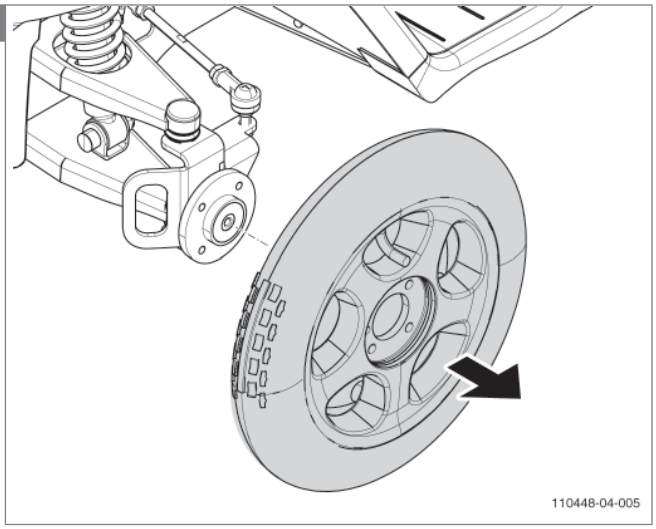


Adjustment shock absorber - front

Preparation
- Switch off the scooter with the ignition key.

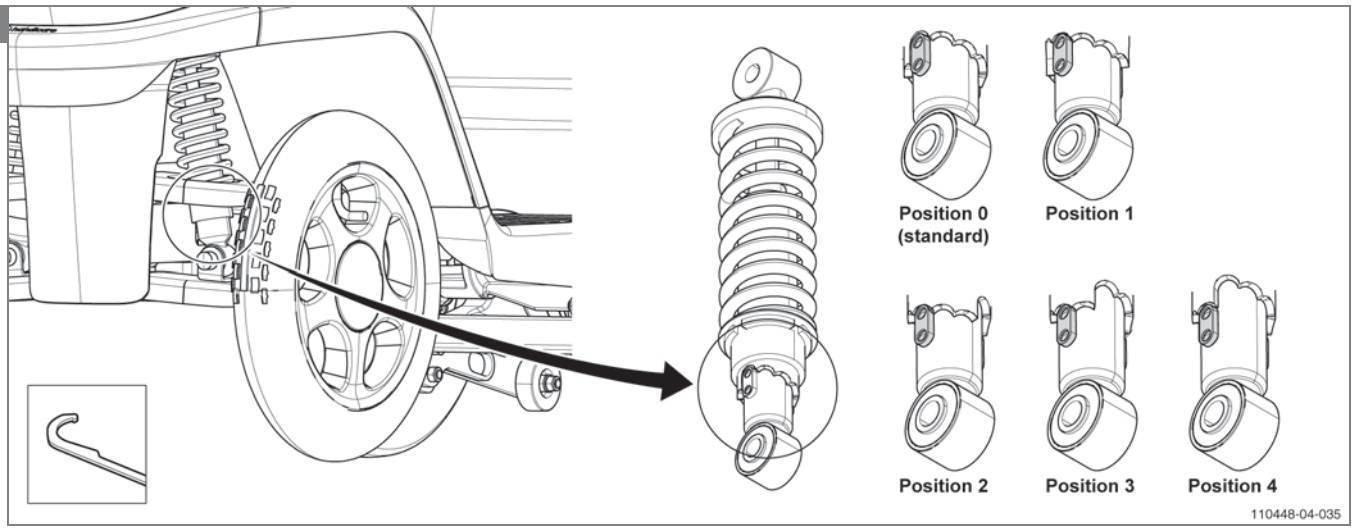
Instructions
The following operations are required to adjust the shock absorber - front:
- Read the table for more information about the adjustment of shock absorbers.
- Use the suspention adjustment key to adjust the shock absorber as desired.

Relevant article numbers
- N.a.

Tools used
- 9000825 Suspension adjustment key

Notice
- Position 0 soft and position 4 hard

1



Replacing the shock absorber - front

Preparation
- Switch off the scooter with the ignition key.
- Use a lifting device to raise the scooter clear of the ground.

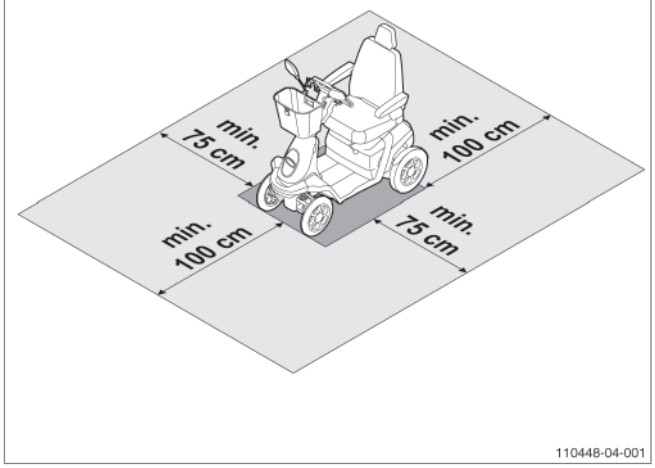
Instructions
The following operations are required to replace the shock absorber - front:
Note! Suitable work area required!
- Remove the basket, the front tiller cover, the mounting bracket for the mirrors, the front cover, the front spoiler, the front cover rear part, the front fender L/R, the front cover bottom and the front bumper.
- Remove the Allen hexagon screws and locknut form the shock absorbers on the swing arm top and lower assy.
- Remove shock absorber
- Adjust the new shock absorber according the specifications.
- Replace the new and adjusted shock absorber.
- Rebuild the scooter in the reverse order.
- **Note!** Be sure you fasten all bolts and nuts with the correct torque!

Relevant article numbers
- 1012525 Shock absorber - front

Tools used
- Torque wrench, socket,17 mm
- Socket, 7 mm
- Screwdriver, crosshead
- Allen key, 8 mm
- 9000825 Suspension adjustment key

Notice
- Position 0 soft and position 4 hard

1



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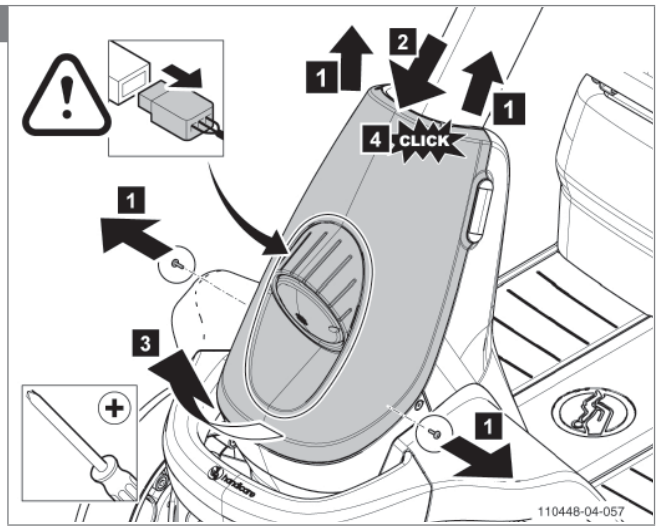
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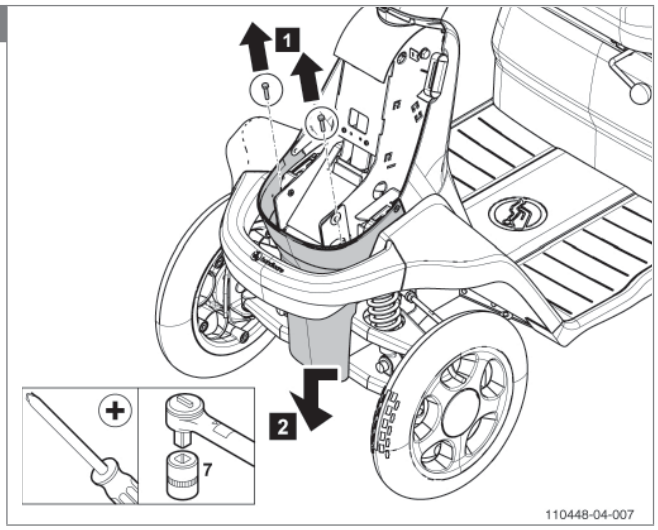
1
4 CLICK
1
3
1
110448-04-057

4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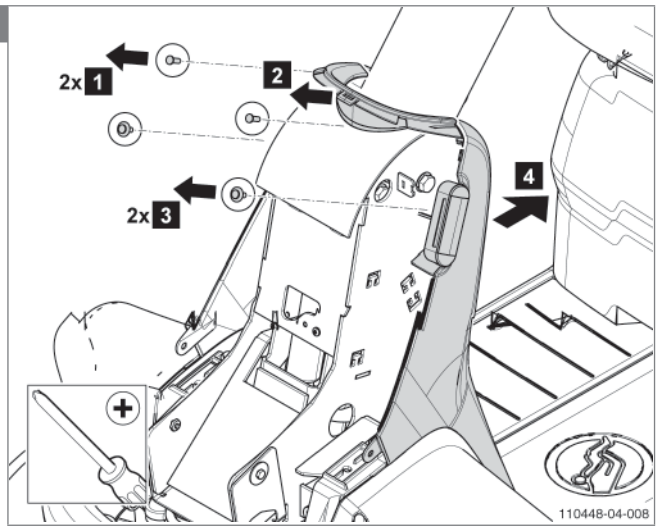
5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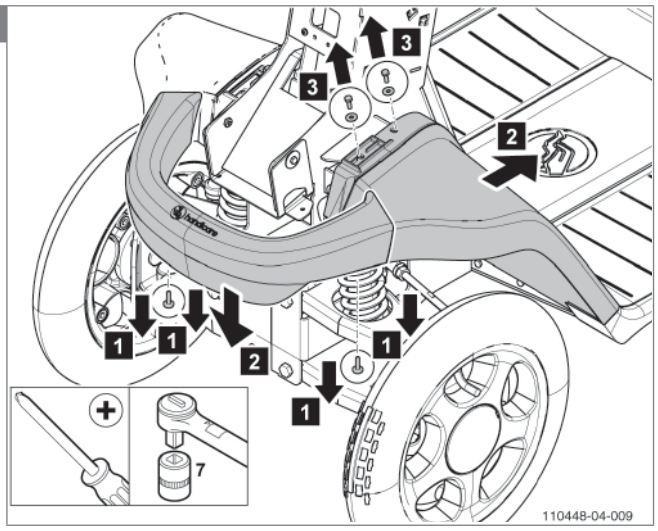
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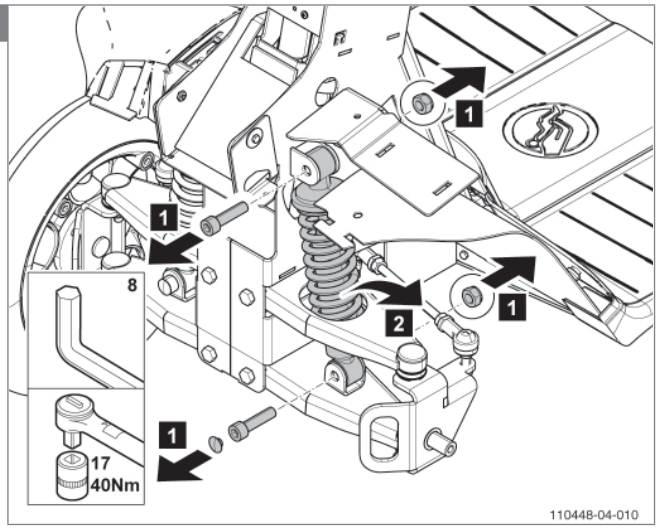
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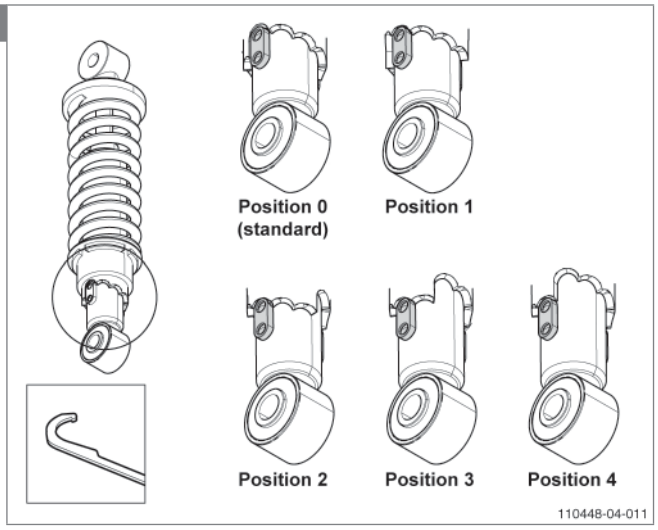
40Nm
110448-04-010

8


Position 0
(standard)
Position 1
Position 2
Position 3
Position 4
110448-04-011

Replacing the swing arms (top and lower assy)

Preparation
- Switch off the scooter with the ignition key.
- Use a lifting device to raise the scooter clear of the ground.

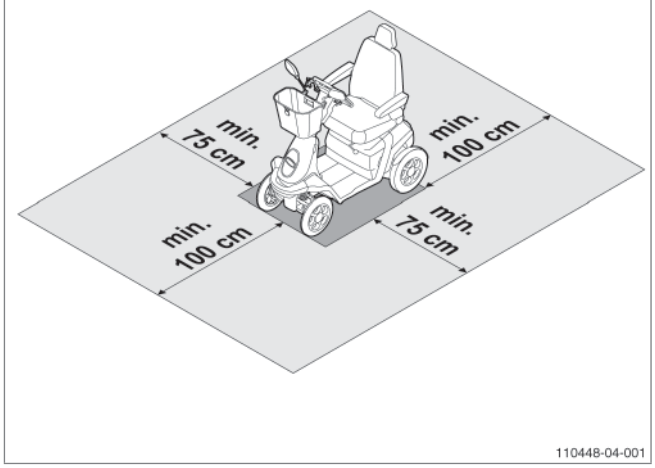
Instructions
The following operations are required to replace the swing arms:
Note! Suitable work area required!
- Remove the front cover and the front spoiler.
- Remove the cover and the hexagon bolt to remove the front wheel.
- Remove the hexagon screw from the lower swing arm.
- Remove shock absorber and the two axle suspension parallel bolts.
- Remove the lock nut at the wheel side of the swing arm and turn the swing arm out of its position.
- Replace the new swing arm.
- Rebuild the scooter in the reverse order.

Relevant article numbers
- 9004459 Swing arm lower assy
- 9004458 Swing arm top assy

Tools used
- Torque wrench, socket, 7 mm-13 mm / socket bit, 6 mm
- Torque wrench, socket, 17 mm
- Allen key, 8 mm
- Screwdriver
- Open ended spanner, 11 mm

Notice
- N.a.

1



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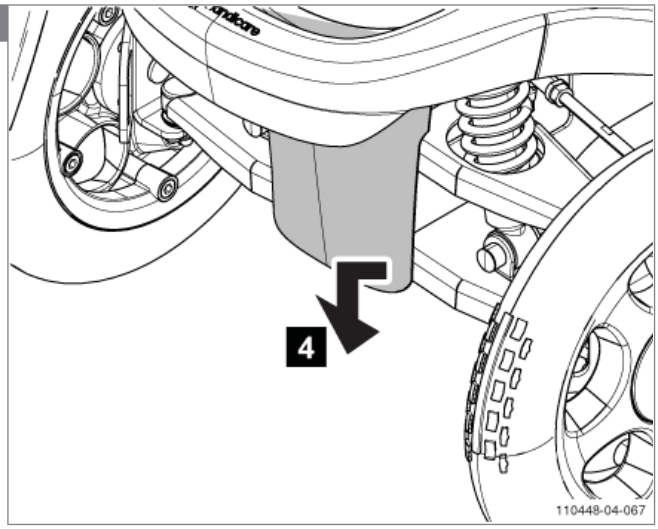
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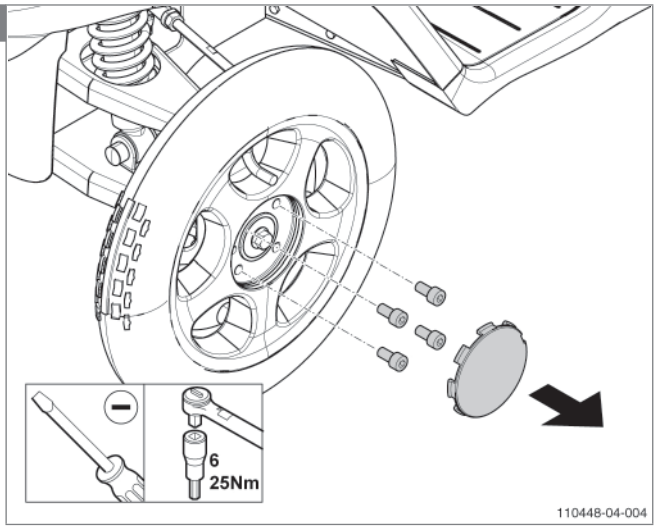
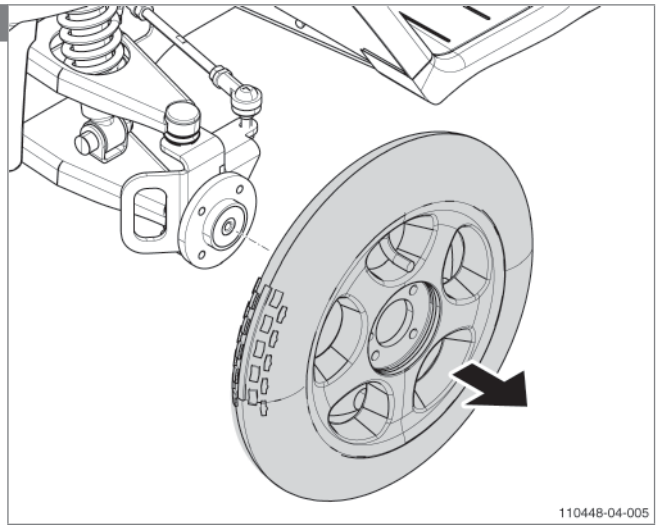

6
25Nm
110448-04-004

5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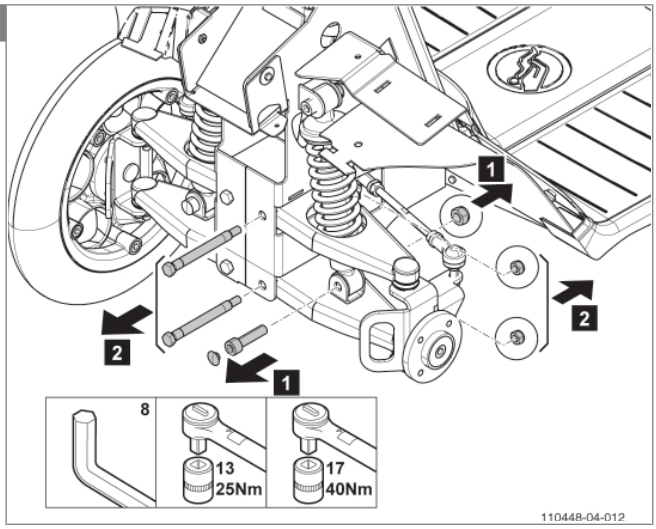
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40Nm
110448-04-012

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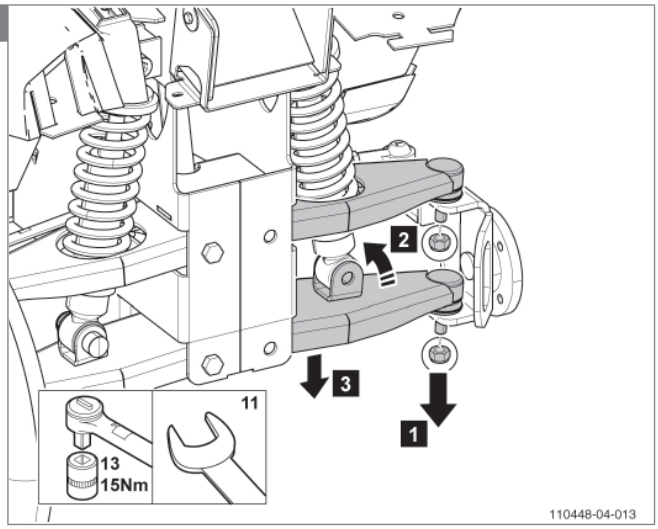
2
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11
13
15Nm
110448-04-013

5.4.3 Rear frame

Replacing the rear wheel

Preparation
- Switch off the scooter with the ignition key.
- Use a lifting device to raise the scooter clear of the ground.

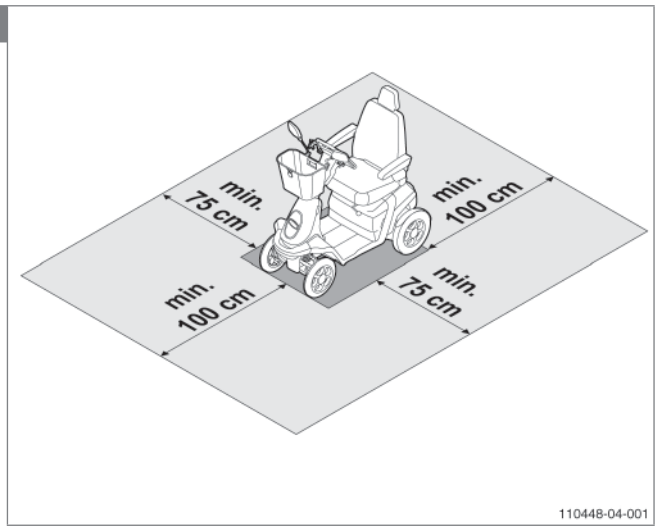
Instructions
The following operations are required to replace the rear wheel:
Note! Suitable work area required!
- Remove the cover and four hexagon head cap screws to remove the rear wheel.
- Mount the new rear wheel in the reverse order.

Relevant article numbers
- 1014662 Rear wheel 8" right, black assy
- 1014661 Rear wheel 8" left, black assy

Tools used
- Screwdriver
- Torque wrench, socket bit, 6 mm

Notice
- N.a.

1



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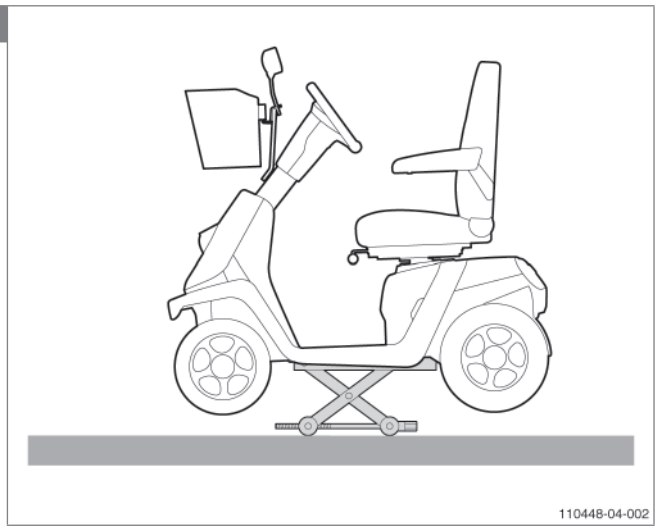

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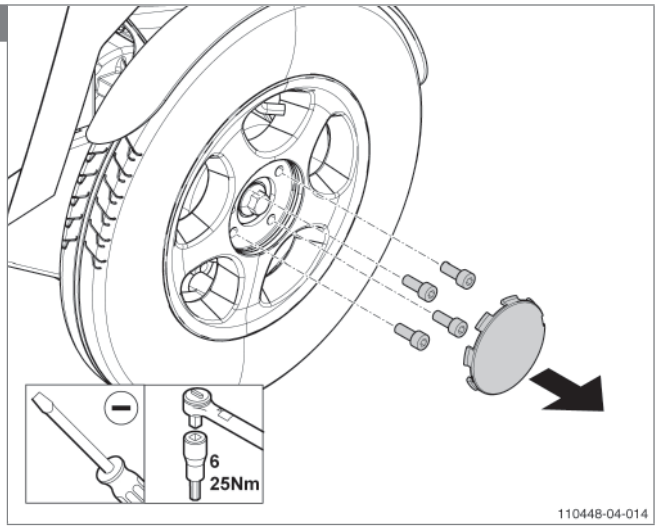

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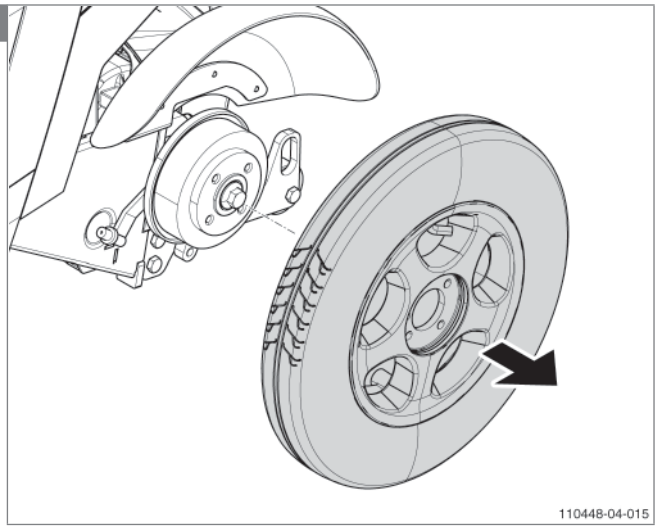


Replacing the mechanical brake

Preparation
- Switch off the scooter with the ignition key.
- Use a lifting device to raise the scooter clear of the ground.

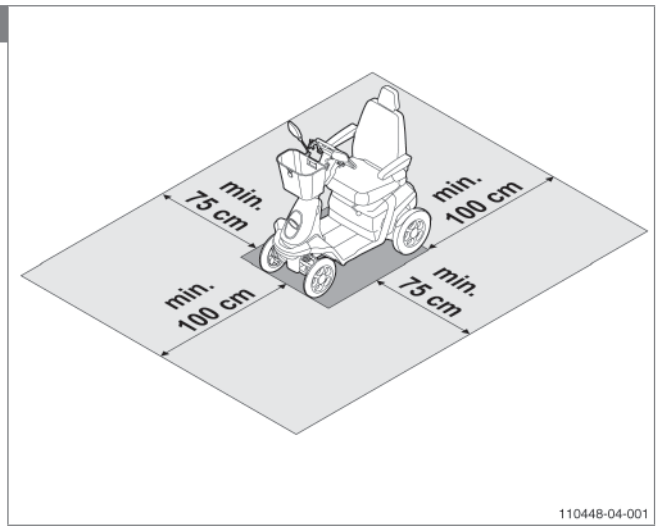
Instructions
The following operations are required to replace the mechanical brake:
Note! Suitable work area required!
- Remove the cap and hexagon flange bolt to remove the rear wheel.
- Remove the brake cable.
- Remove the two hexagon head cap screw and remove the brake.
- Mount the new brake.
- Rebuild the scooter in the reverse order.
- Use Loctite 243 before fastening the hexagon flange bolt with 90 Nm.

Relevant article numbers
- 9004141 Brake left

Tools used
- Screwdriver
- Torque wrench, socket, 16 mm
- Allen key, 4 mm
- Loctite 243

Notice
- N.a.

1



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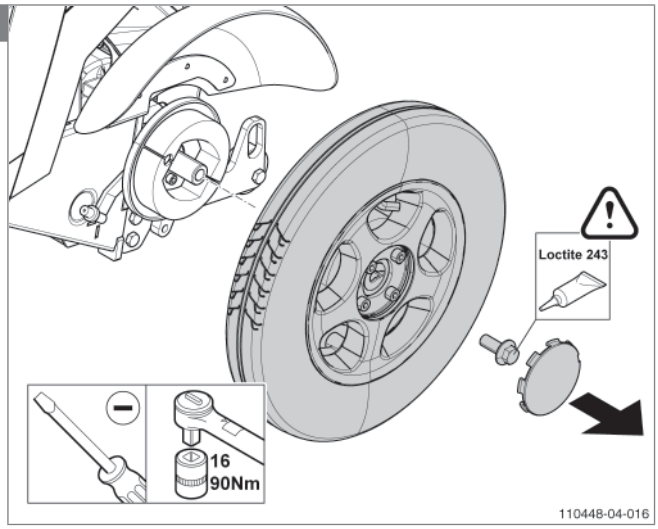

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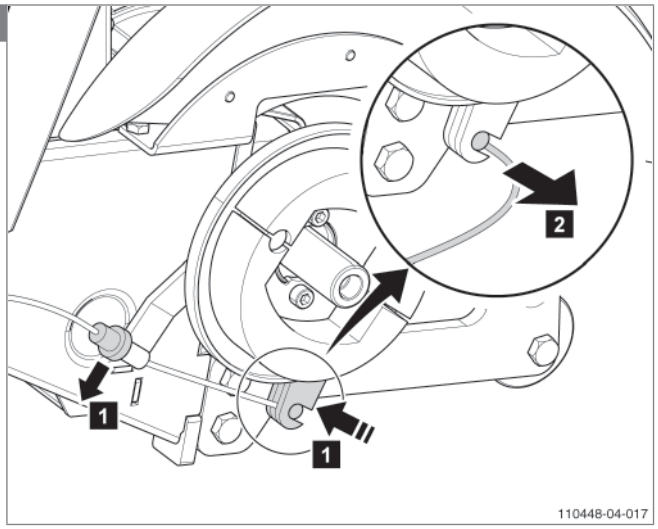
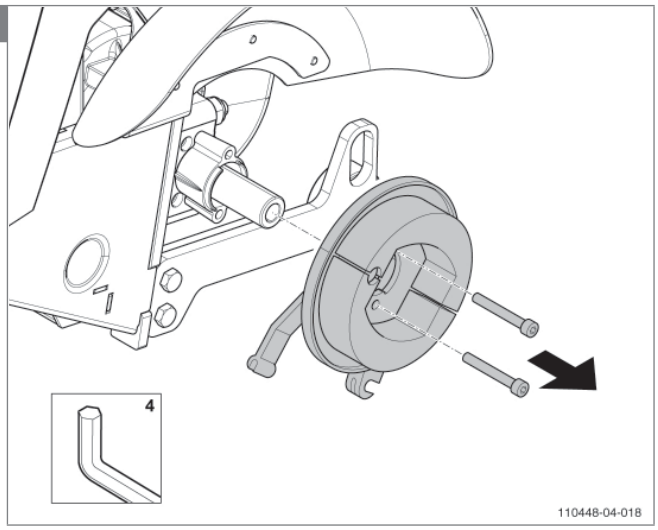


Note! *Use Loctite 243 at the indicated locations during assembling the wheelchair.*

5



Replacing the carbon brushes

Preparation
- Switch off the scooter with the ignition key.
- Disconnect the batteries.
- Use a lifting device to raise the scooter clear of the ground.

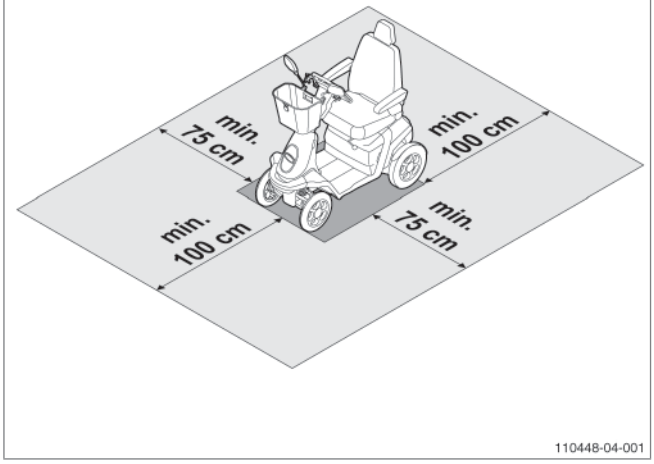
Instructions
The following operations are required to replace the carbon brushes:
Note! Suitable work area required!
- Remove the rear cover.
- Disconnect all motor connectors from the S-drive controller.
- Lock the freewheel lever.
- Remove four hexagon bolts and remove the motor cover.
- Remove the cover and hexagon flange bolt to remove the rear wheel.
- Remove the two hexagon head cap screws to remove the brake mounting, key and brake.
- Remove the hexagon screw and remove the free wheel lever.
- Remove the four lock nuts and remove the transaxle and rubber mounting strips.
- Unscrew the carbon brush cover.
- Pull the carbon brush out of the housing and remove the brush.
- Inspect the collector on the anchor of the motor; if the collector is seriously worn, replace the entire drive unit.
- Clean the collector on the anchor of the motor from dust with pressed air.
- Place the carbon brush in the holder; this can be done in one way only.
- Screw the new plastic screw cap onto the carbon brush holder.
- Rebuild the scooter in the reverse order.

Relevant article numbers
- 1012313 Motor brush set (4 carbon brushes with covers)

Tools used
- Lifting device
- Screwdriver
- Allen key, 4 mm
- Socket, 7 mm, 10 mm and 16 mm

Notice
- Some parts need to be replaced; the replacement is indicated by a symbol.
- Make sure the scooter is switched off.

1



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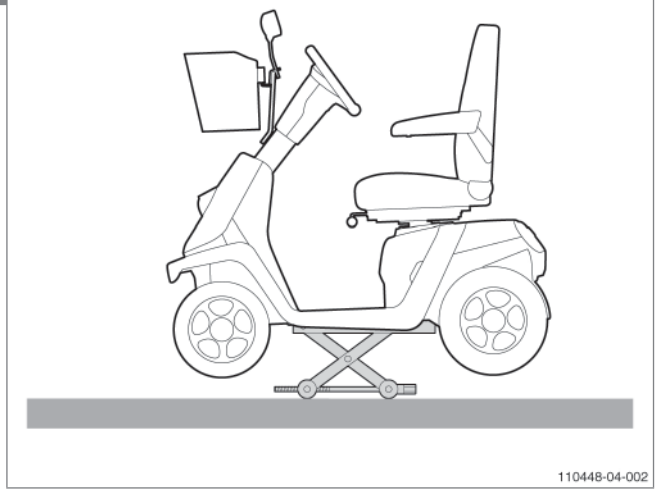

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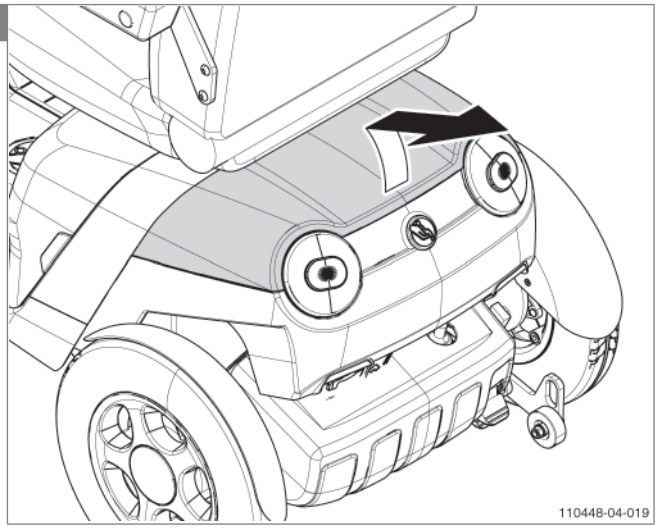
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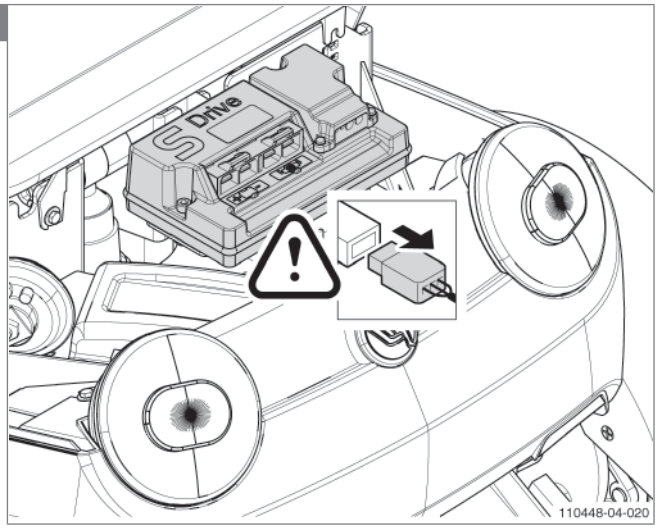
S Drive
110448-04-020

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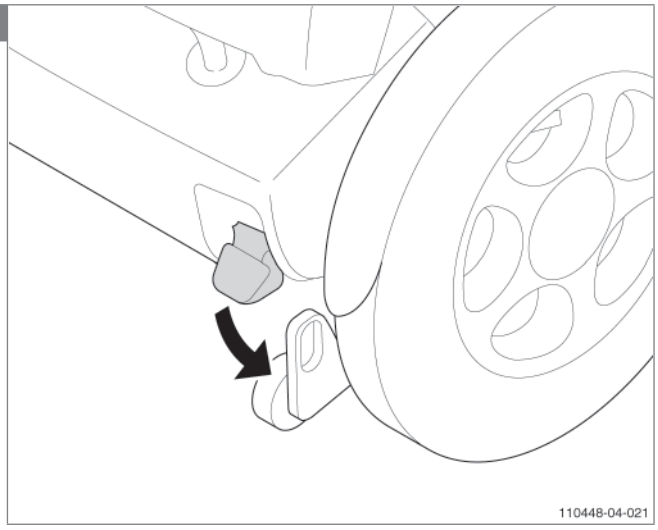
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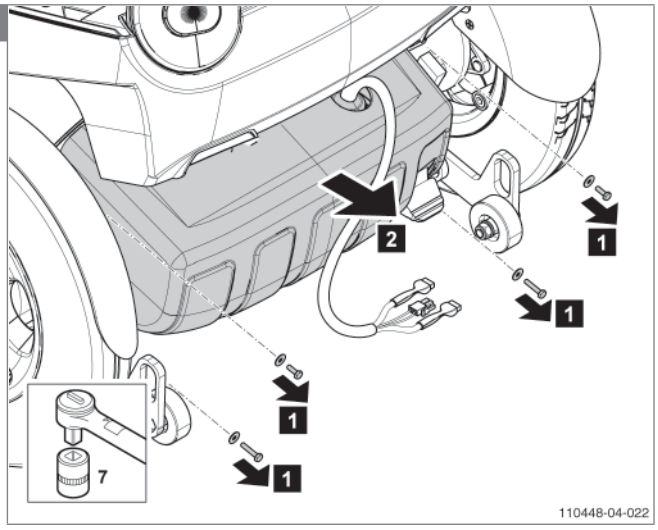
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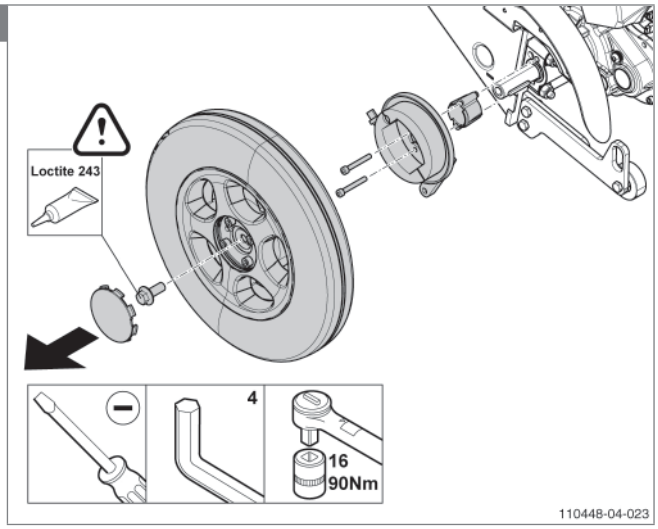
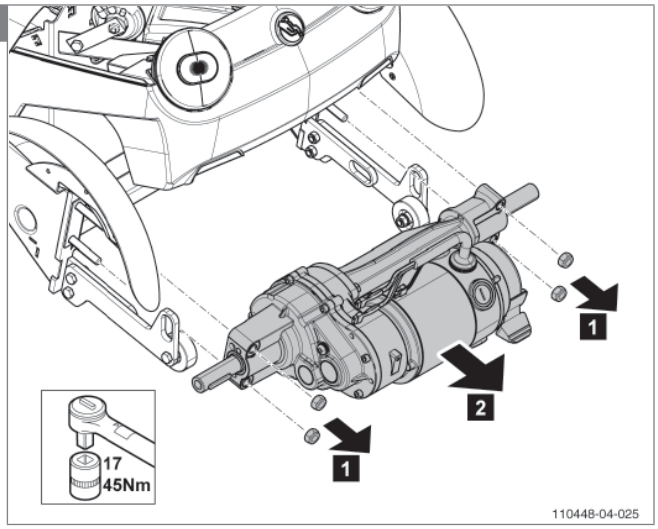

Loctite 243
4
16
90Nm
110448-04-023

8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45Nm
110448-04-025

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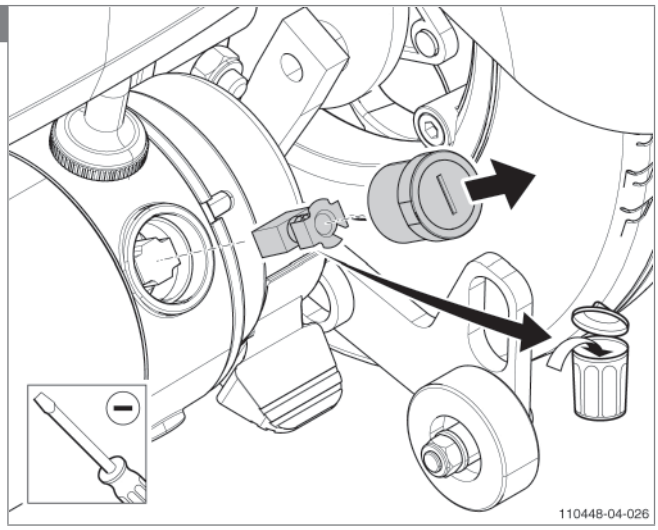


Replacing the motor brake

Preparation
- Switch off the scooter with the ignition key.
- Disconnect the batteries.
- Use a Lifting device to raise the scooter clear of the ground.

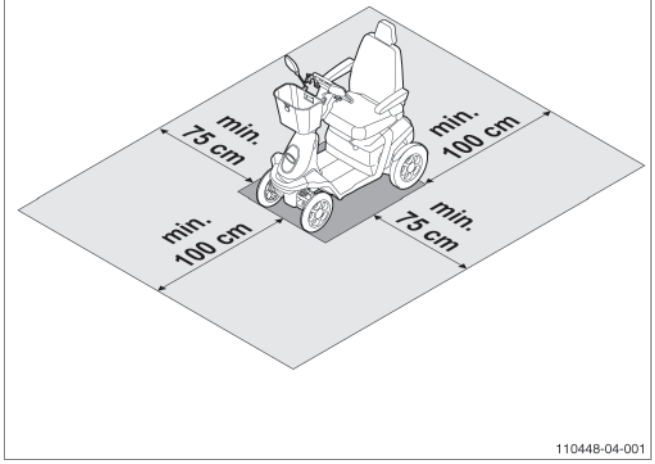
Instructions
The following operations are required to replace the free wheel lever:
Note! Suitable work area required!
- Remove the rear cover.
- Disconnect all motor connectors from the S-drive controller and the speed sensor cable.
- Lock the freewheel lever.
- Remove the four hexagon bolts and remove the motor cover.
- Remove the hexagon screws and remove the free wheel lever.
- Mount the new free wheel lever.
- Rebuild the scooter in the reverse order.

Relevant article numbers
- 1012104 Motor brake

Tools used
- Screwdriver
- Socket, 7 mm
- Allen key, 4 mm

Notice
- Some parts need to be replaced; the replacement is indicated by a symbol.
- Make sure the scooter is switched off.

1



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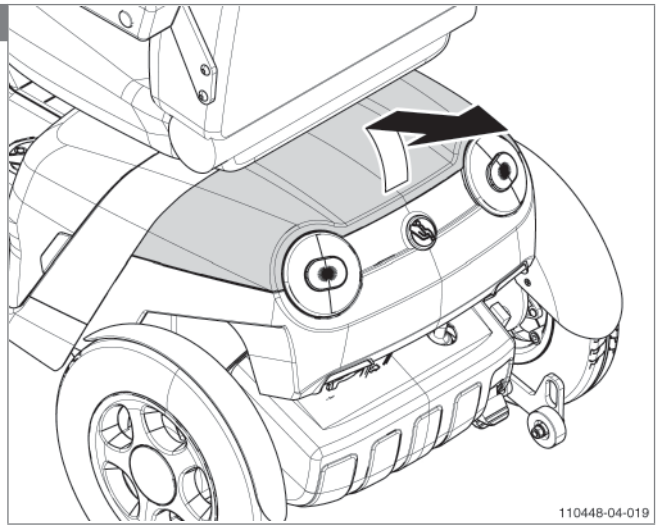
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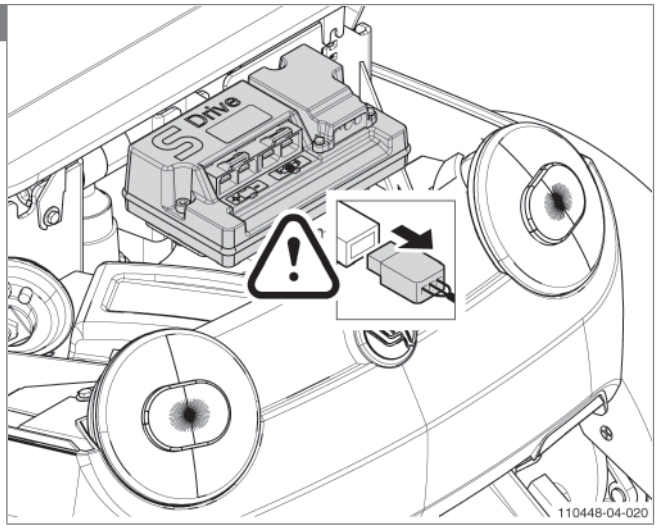
S Drive
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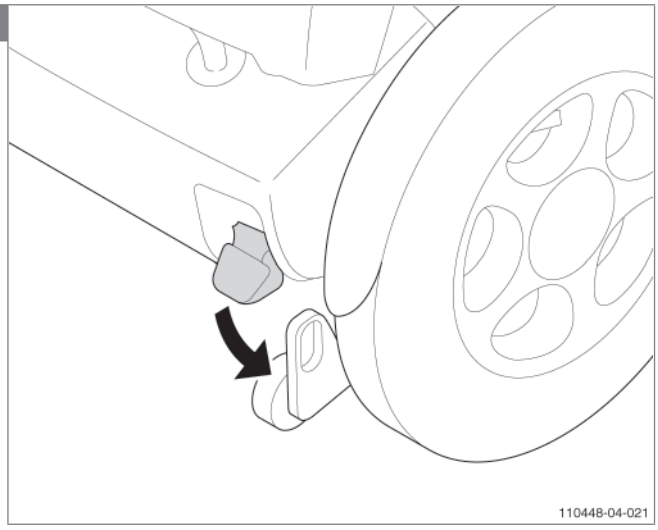
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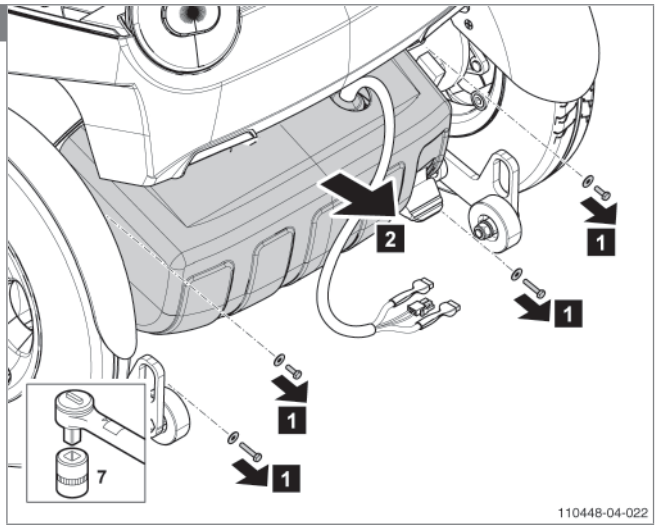
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110448-04-022

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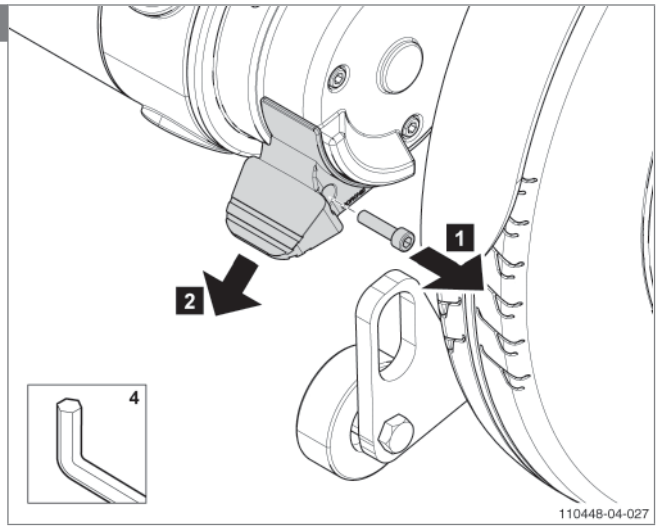
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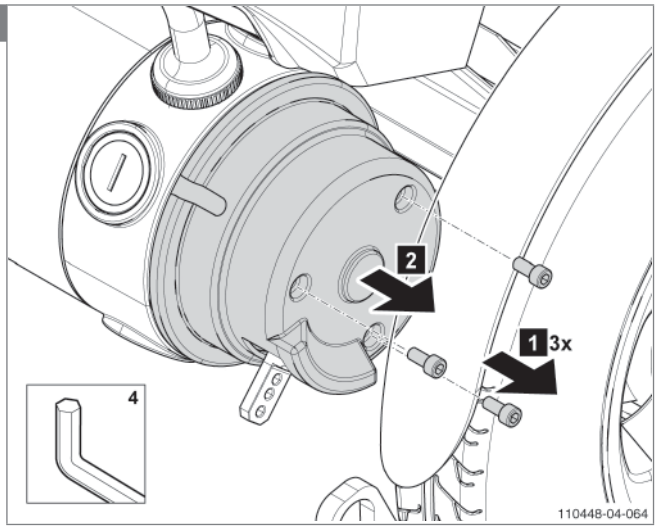
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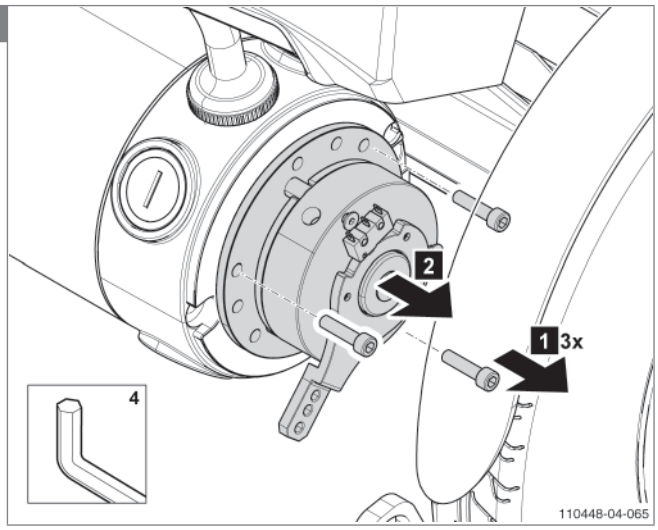


Replacing the transaxle

Preparation
- Switch off the scooter with the ignition key.
- Disconnect the batteries.
- Use a lifting device to raise the scooter clear of the ground.

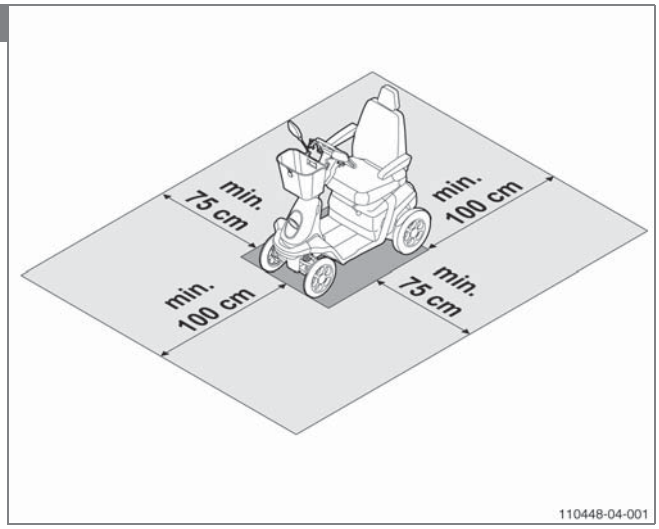
Instructions
The following operations are required to replace the transaxle:
Note! Suitable work area required!
- Remove the rear cover.
- Disconnect all motor connectors from the S-drive controller and the speed sensor cable..
- Lock the freewheel lever.
- Remove the four hexagon bolts and remove the motor cover.
- Remove the cover and hexagon flange bolt to remove the rear wheel.
- Remove the two hexagon head cap screws to remove the brake mounting, key and brake.
- Remove the hexagon screw and remove the free wheel lever.
- Remove the four lock nuts and remove the transaxle and rubber mounting strips.
- Mount the new the transaxle.
- Rebuild the scooter in the reverse order.
- Use Loctite 243 before fastening the hexagon flange bolt with 90 Nm.

Relevant article numbers
- 1012530 Transaxle standard
- 1012529 Transaxle heavy duty

Tools used
- Socket, 7 mm
- Torque wrench, socket, 16 mm
- Screwdriver
- Allen key, 4 mm
- Ring spanner, 17 mm
- Loctite 243

Notice
- Some parts need to be replaced; the replacement is indicated by a symbol.
- Make sure the scooter is switched off.

1



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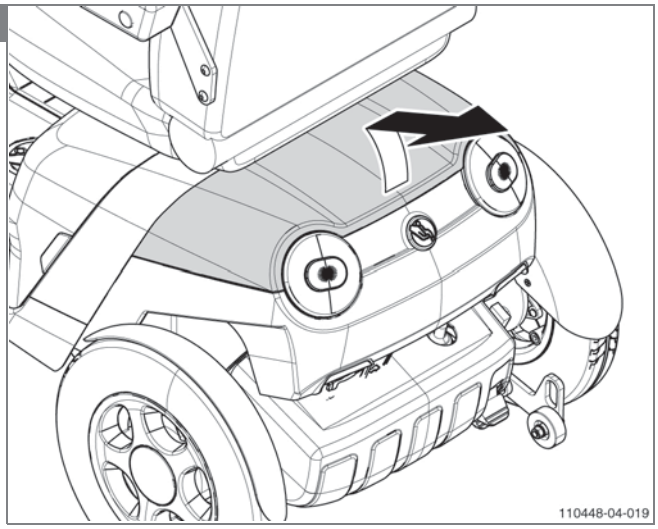

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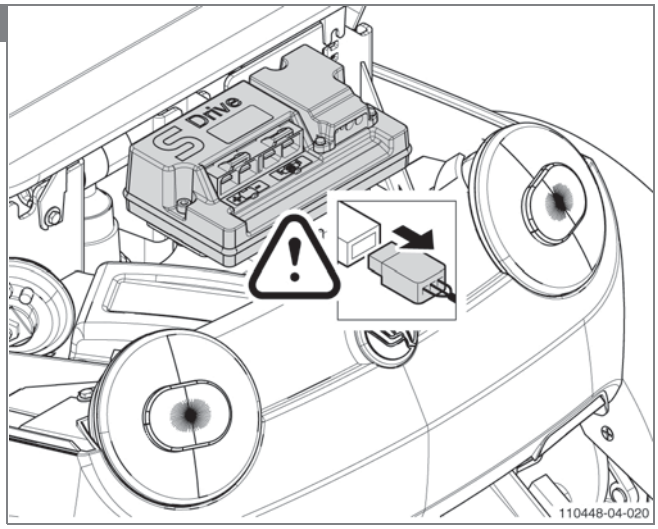

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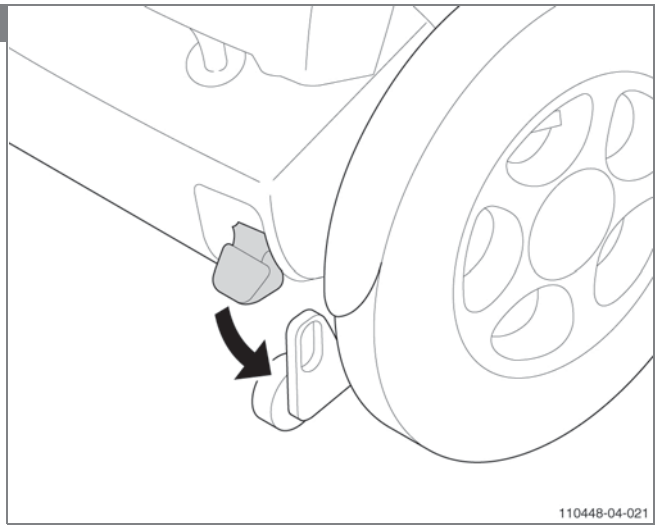

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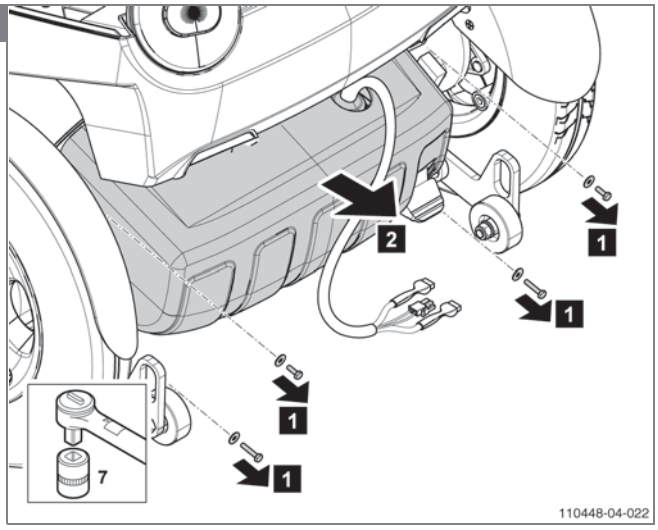

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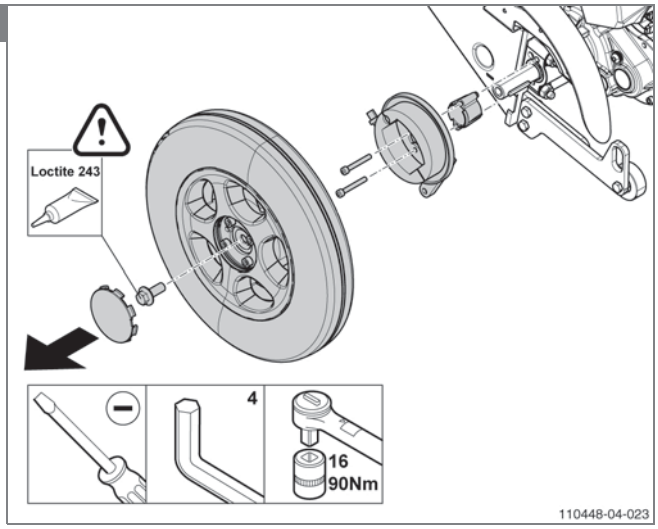

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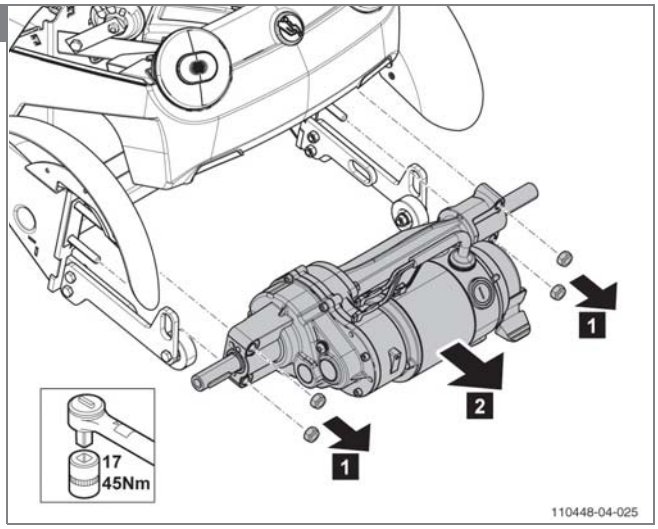


Note! *Use Loctite 243 at the indicated locations during assembling the wheelchair.*

Adjustment the shock absorber - rear

Preparation
- Switch off the scooter with the ignition key.

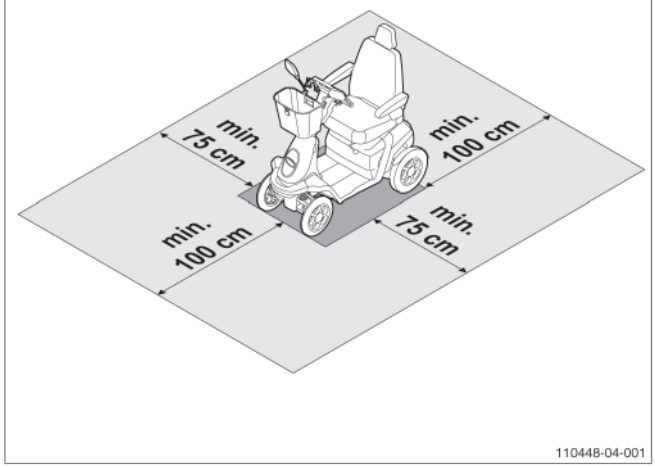
Instructions
The following operations are required to adjust the shock absorber - rear:
Note! Suitable work area required!
- Remove the seat.
- Remove the battery cover.
- Loosen the battery strap.
- Disconnect all connectors from the battery.
- Remove the battery.
- Read the table for more information about the adjustment of shock absorbers.
- Use the special adjustment tool to adjust the shock absorber as desired.
- Rebuild the scooter in the reverse order.

Relevant article numbers
- N.a.

Tools used
- 9000825 Suspension adjustment key

Notice
- Make sure the scooter is switched off.

1



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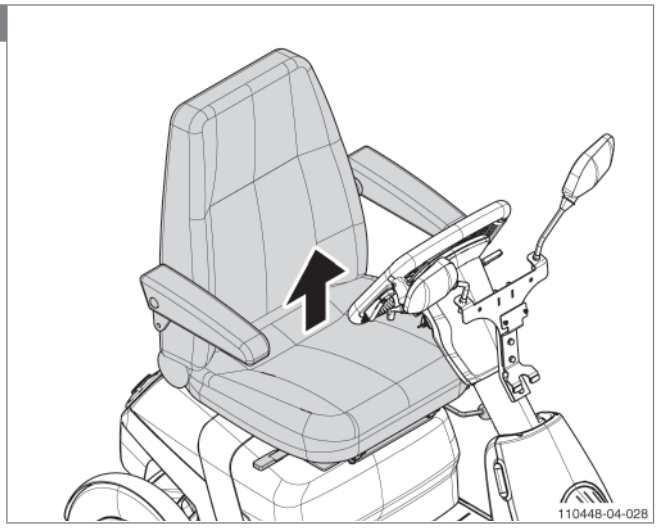

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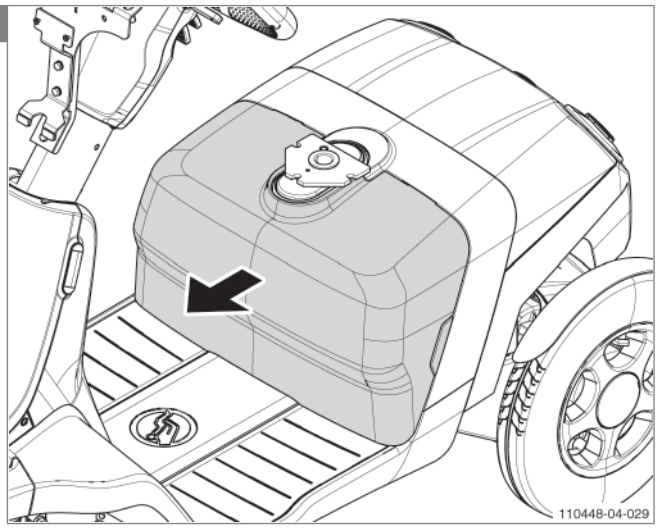
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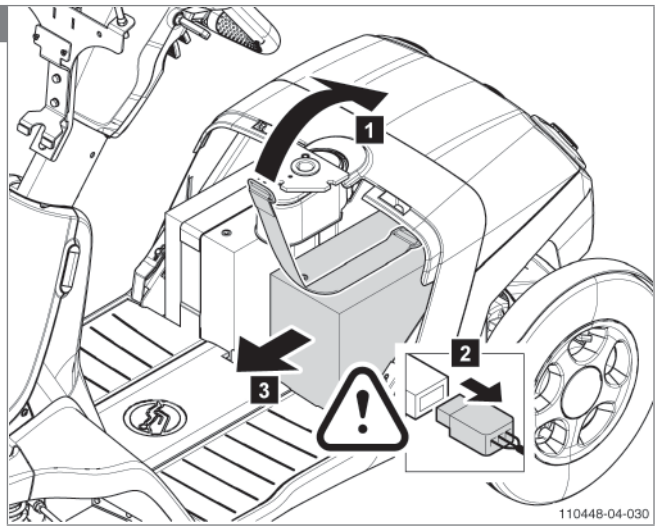
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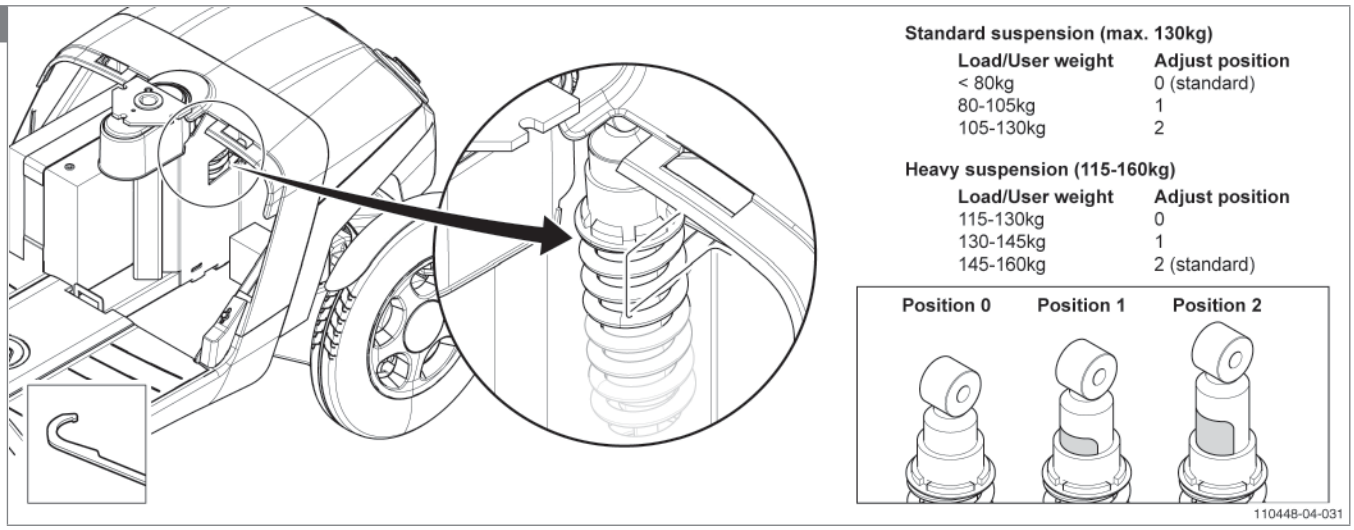

Standard suspension (max. 130kg)
Load/User weight
Adjust position
< 80kg
0 (standard)
80-105kg
1
105-130kg
2
Heavy suspension (115-160kg)
Load/User weight
Adjust position
115-130kg
0
130-145kg
1
145-160kg
2 (standard)
Position 0
Position 1
Position 2
110448-04-031

Replacing the shock absorber - rear

Preparation
- Switch off the scooter with the ignition key.

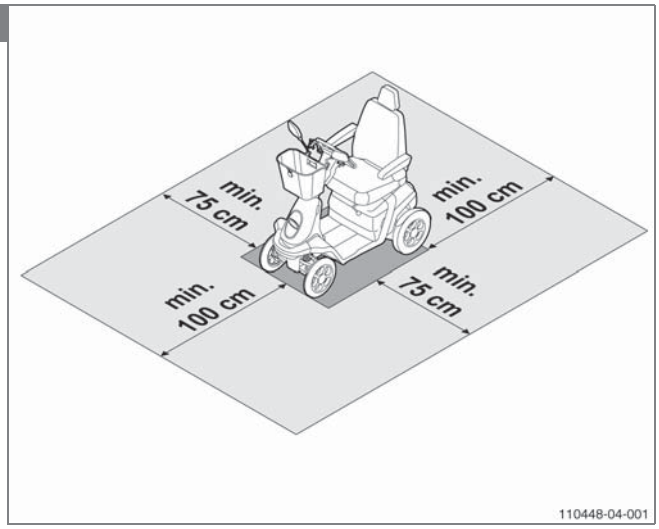
Instructions
The following operations are required to replace the shock absorber - rear:
Note! Suitable work area required!
- Remove the seat.
- Lift the scooter to raise the wheels clear from the ground.
- Remove the rear cover.
- Remove the battery cover.
- Remove the roll-bar
- Remove the hexagon head cap screw
- Take out the shock absorber.
- Read the table for more information about the adjustment of shock absorbers.
- Use the special adjustment tool to adjust the shock absorber as desired.
- Mount the new, correct adjusted, shock absorber.
- Rebuild the scooter in the reverse order.

Relevant article numbers
- 9000603 Shock absorber standard
- 9000683 Shock absorber heavy duty

Tools used
- Socket, 7 mm / 17 mm
- Allen key, 8 mm
- 9000825 Suspension adjustment key

Notice
- Make sure the scooter is switched off.

1



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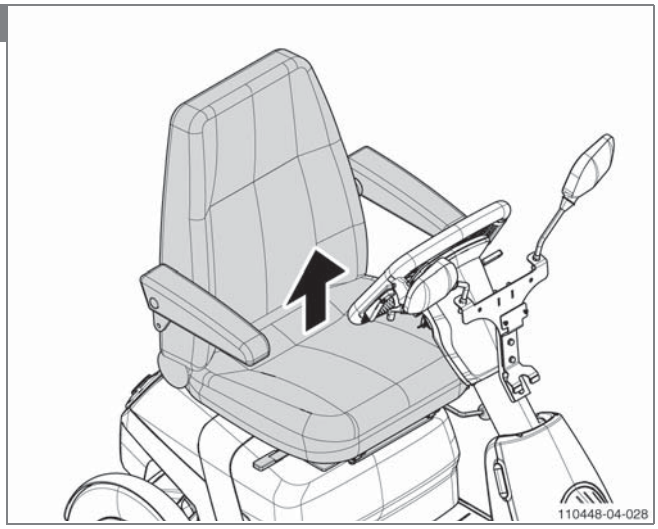

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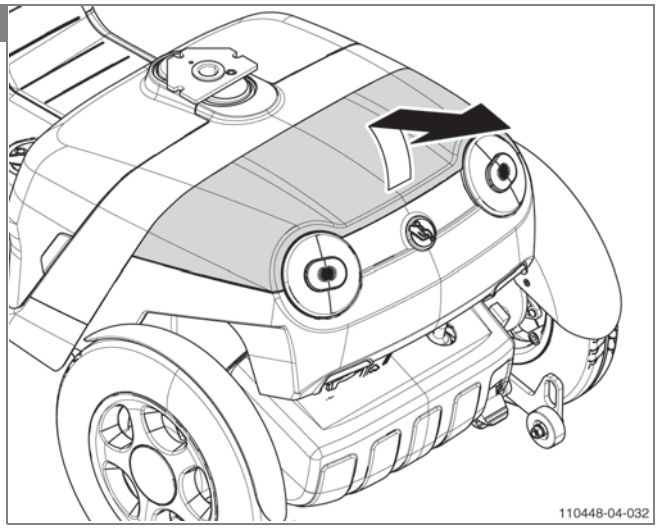
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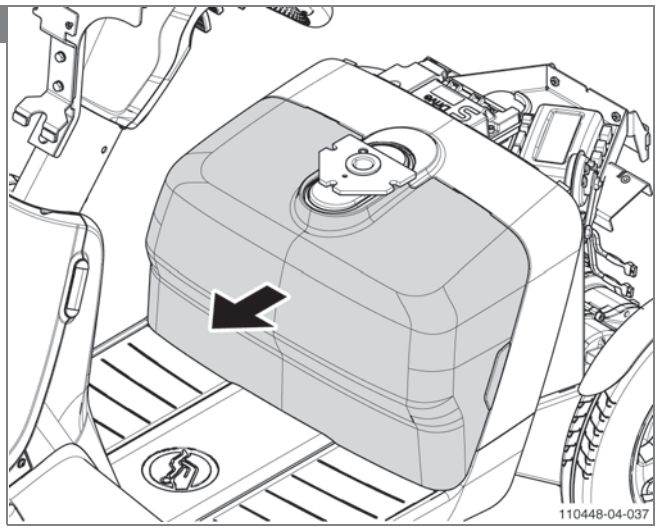
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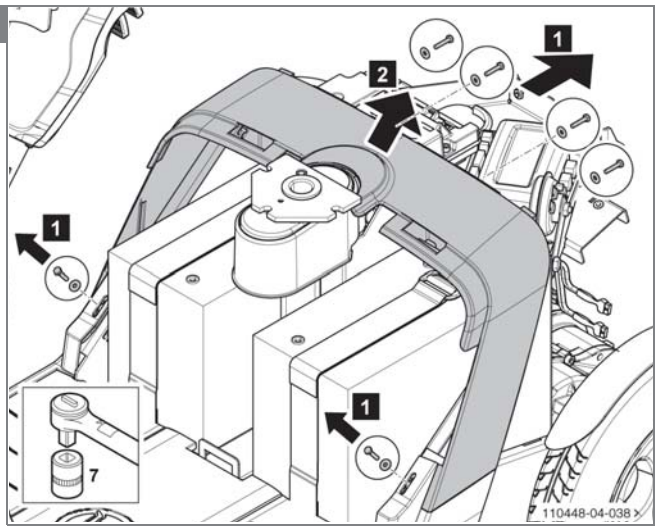
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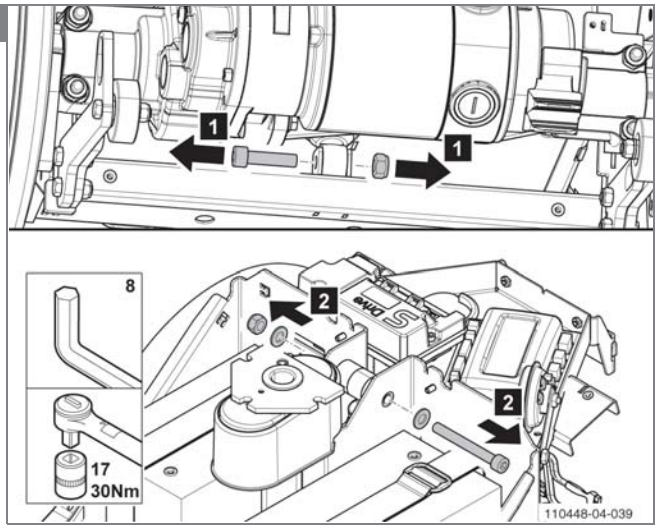
1
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8
2
2
17
30Nm
110448-04-039

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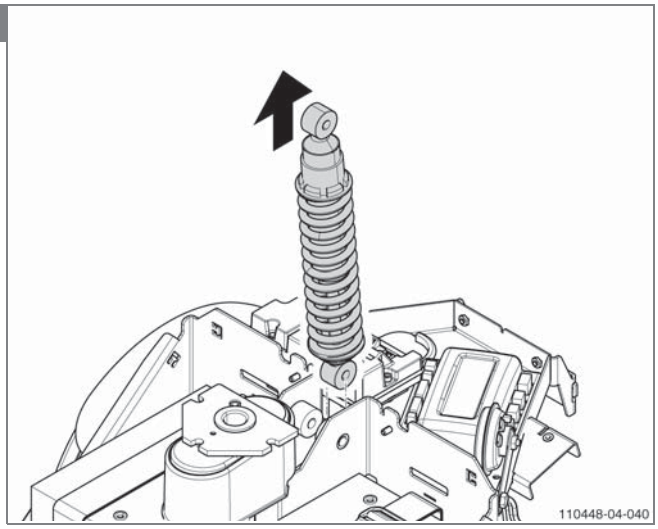
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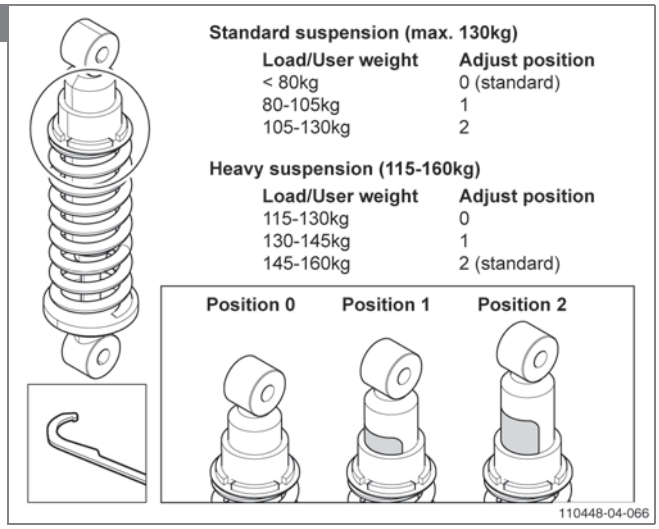

Standard suspension (max. 130kg)
Load/User weight
Adjust position
< 80kg
0 (standard)
80-105kg
1
105-130kg
2
Heavy suspension (115-160kg)
Load/User weight
Adjust position
115-130kg
0
130-145kg
1
145-160kg
2 (standard)
Position 0
Position 1
Position 2
110448-04-066

5.4.4 Steering column

Replacing the steering wheel

Preparation
- Switch off the scooter with the ignition key.
- Disconnect the batteries.

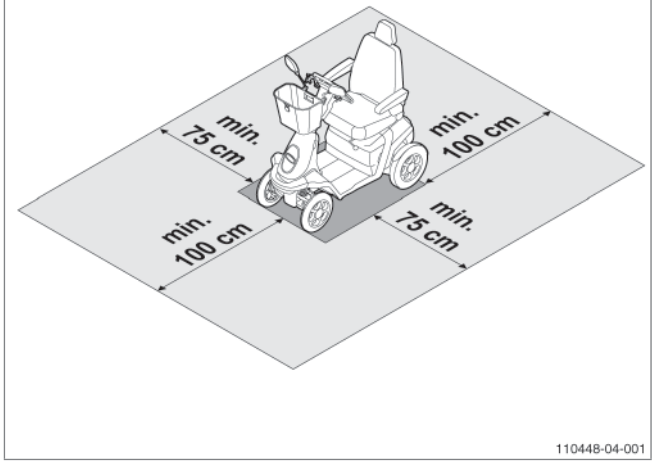
Instructions
The following operations are required to replace the steering column:
Note! Suitable work area required!
- Remove the basket and the mounting bracket for the mirrors.
- Remove the knob of the speed potentiometer.
- Remove the nut, the two Ejot screws and the dashboard.
- Disconnect all connectors from the tiller PCB.
- Remove the three Ejot screws to remove the tiller PCB.
- Remove the two recessed button head screws to remove the console bottom.
- Disconnect the connectors of the console bottom.
- Remove the recessed button head and Ejot screws, disconnect the stop switch and remove the top and bottom steering wheel covers.
- Remove the two Ejot screws and washers to remove the rear cover steering column; disconnect in between the connectors from the ignition switch.
- Remove the two sheet metal screws and the throttle potentiometer; disconnect in between the connector of the throttle.
- Remove the button head screw and the brake lever; disconnect in between the connector from the brake lever.
- Remove the bolt to remove the steering wheel.
- Mount the new steering wheel.
- Rebuild the scooter in the reverse order.

Relevant article numbers
- 9004185 Steering wheel

Tools used
- Socket, 10 mm
- Screwdriver, crosshead
- Allen key, 6 mm

Notice
- Make sure the scooter is switched off.

1



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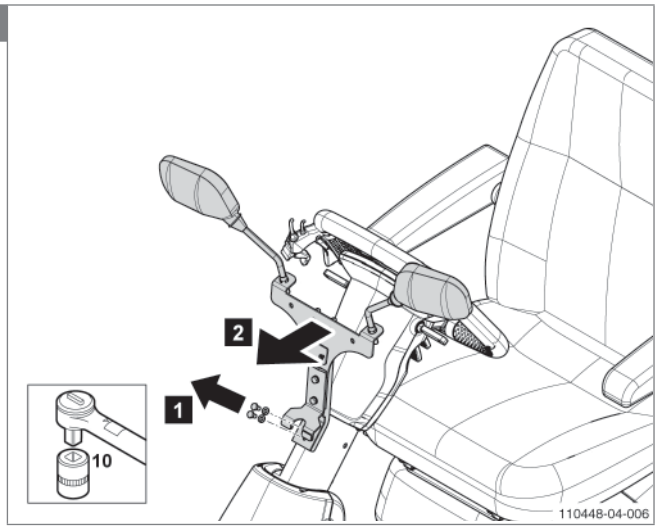

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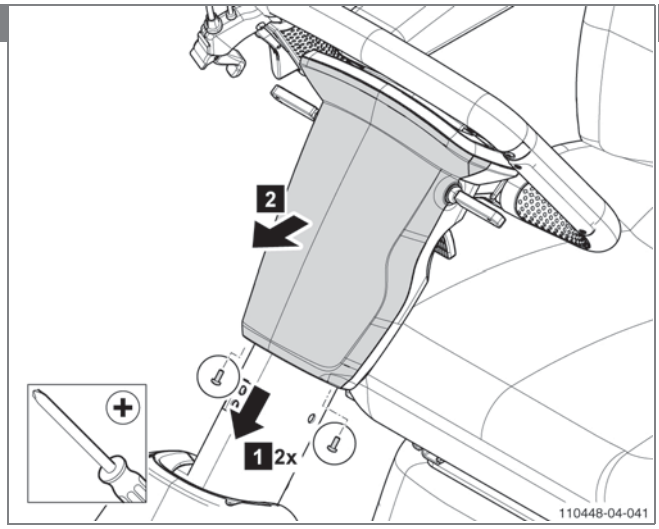
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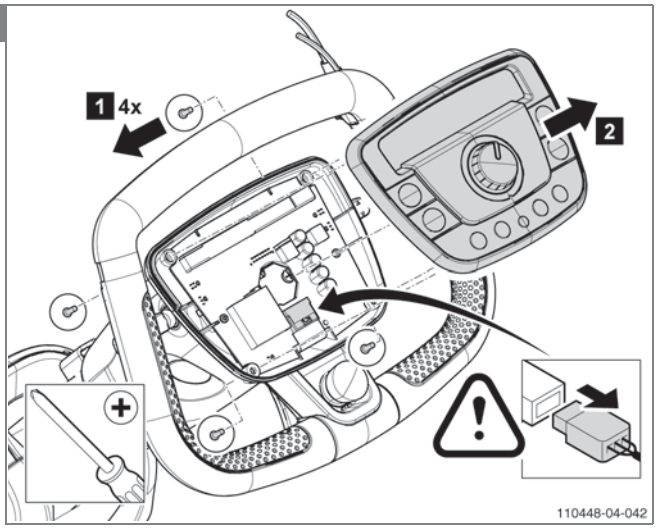
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110448-04-042

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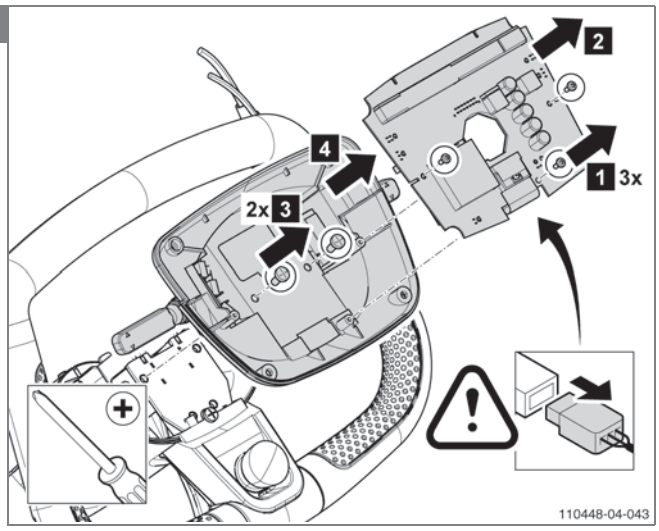
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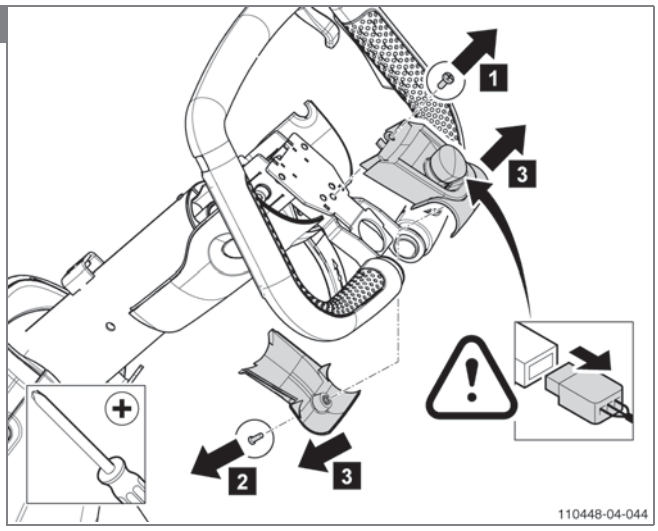
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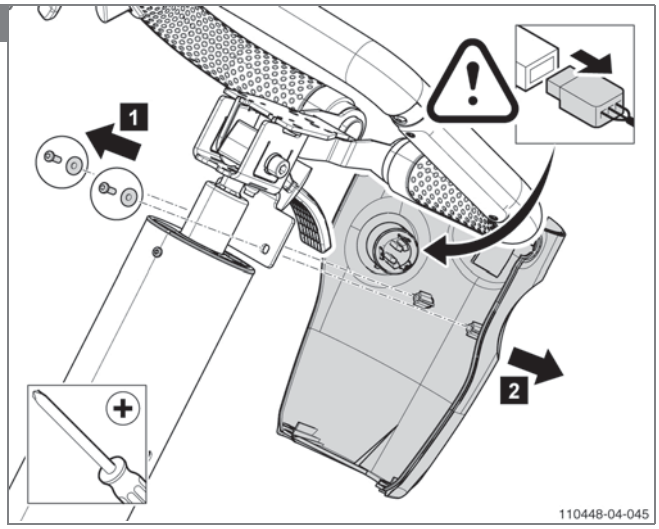
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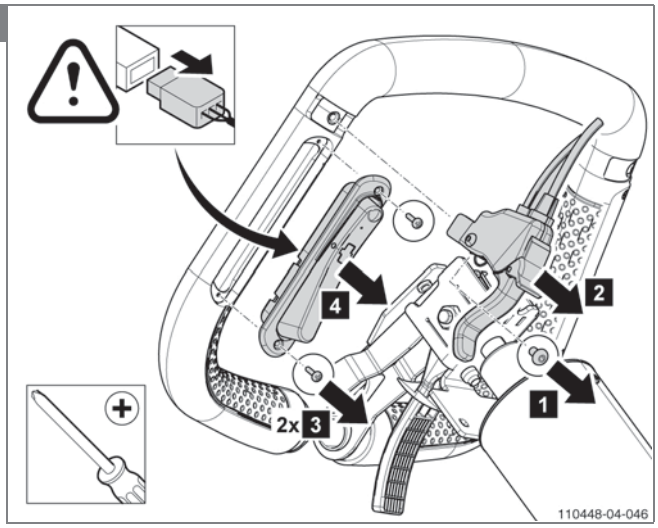
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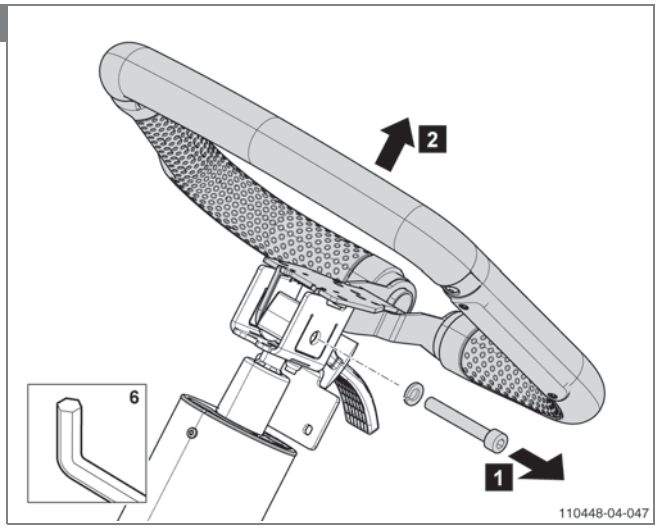


Replacing the gas spring

Preparation
- Switch off the scooter with the ignition key.

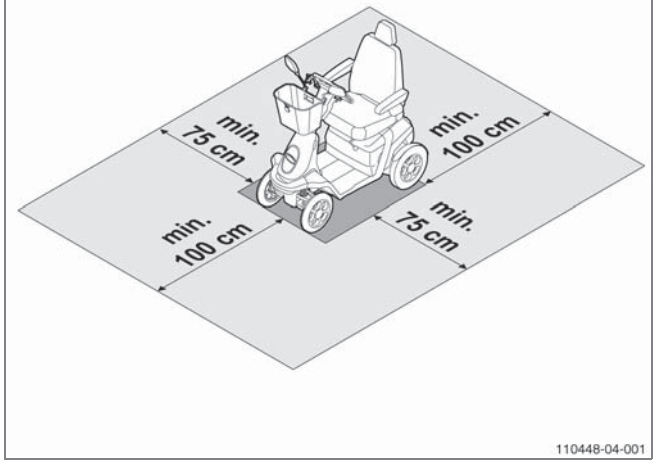
Instructions
The following operations are required to replace the gas spring:
Note! Suitable work area required!
- Remove the basket, the mounting bracket for the mirrors, the front cover and the front cover rear part.
- Pull the handle for steering adjustment upwards and move the steering column downwards.
- Remove the four hinge pins and the spiral pin.
- Disconnect the gas spring actuator, remove the hinge pin and remove the two bolts from the gas spring slider.
- Remove the gas spring slider and loosen the hinge pin and lock nut.
- Mount the new gas spring.
- Rebuild the scooter in the reverse order.
- **Note!** Be sure you fasten all bolts and nuts with the correct torque!

Relevant article numbers
- 9007359 Gas spring 300N

Tools used
- Socket, 7 mm / 8 mm / 10 mm / 13 mm
- Screwdriver, crosshead
- Hammer (plastic)
- Chaser
- Loctite 243

Notice
- N.a.

1



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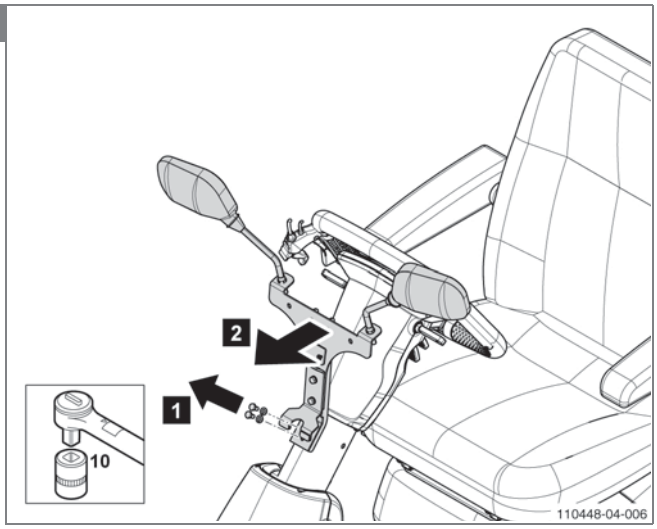

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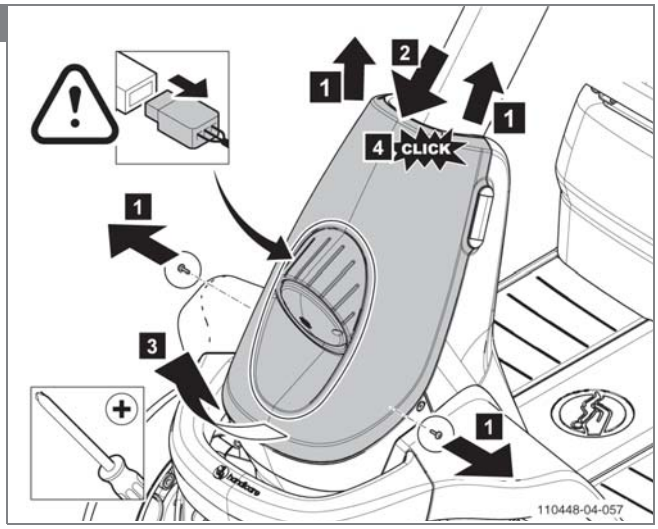
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110448-04-057

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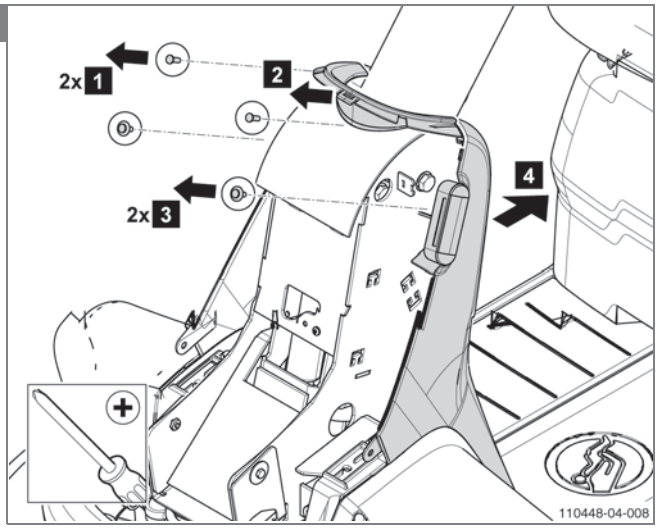
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110448-04-008

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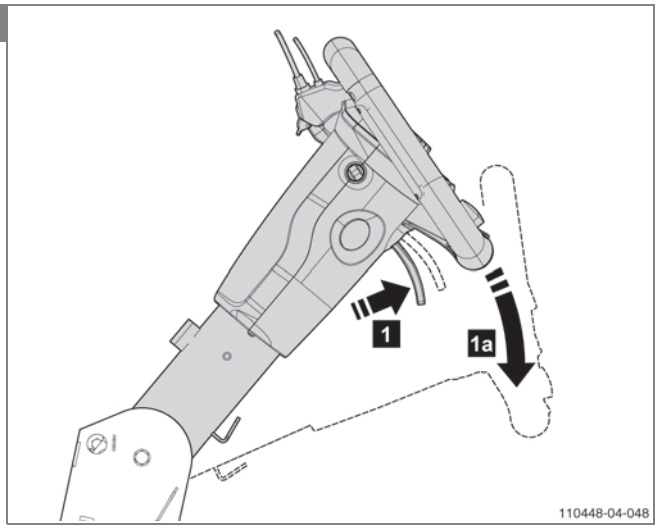
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110448-04-048

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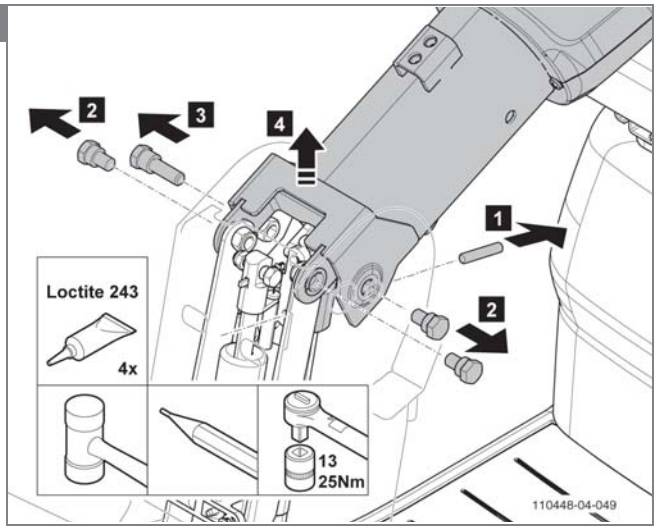
2
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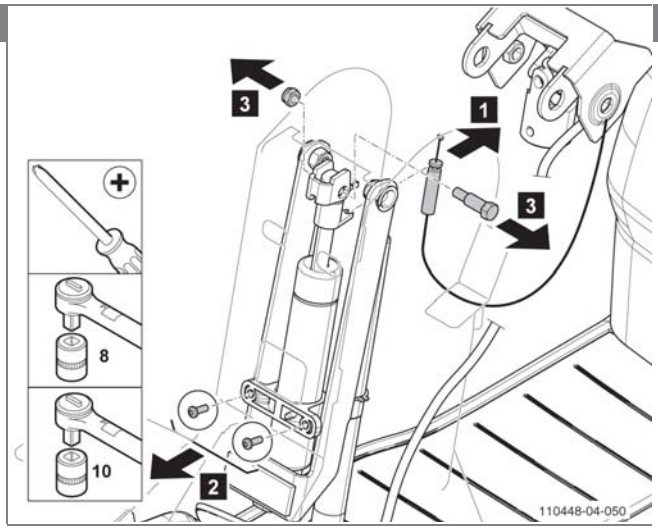
Loctite 243
4x
13
25Nm
110448-04-049

8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110448-04-050

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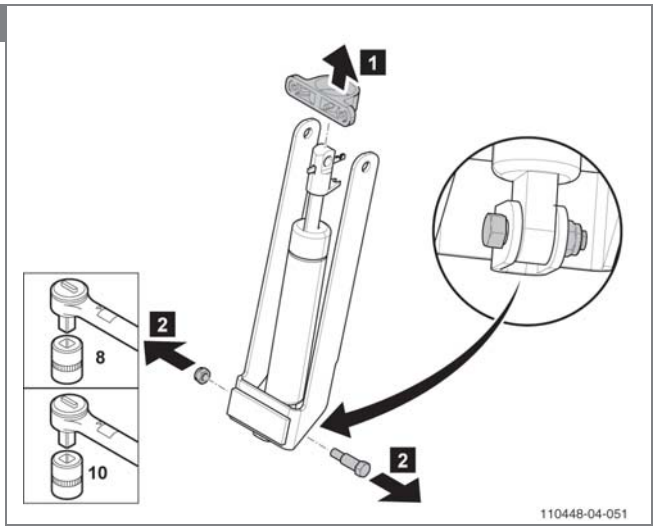
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2
110448-04-051

5.4.5 Console

Replacing the throttle

Preparation
- Switch off the scooter with the ignition key.

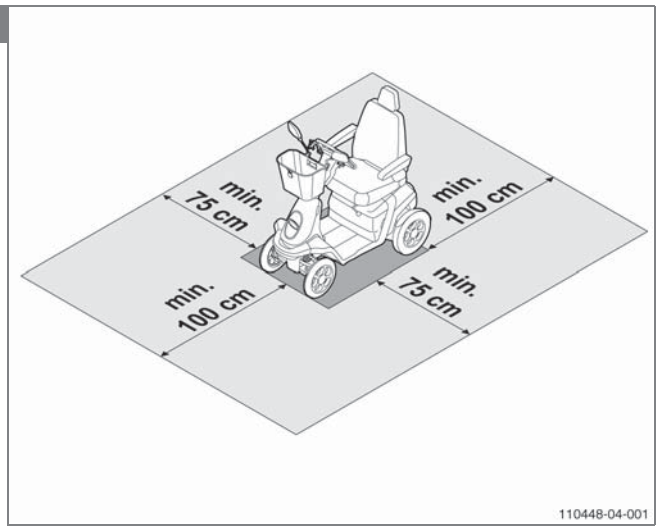
Instructions
The following operations are required to replace the throttle:
Note! Suitable work area required!
- Remove the two sheet metal screws and the throttle; disconnect in between the connector of the throttle.
- Mount the new throttle.
- Rebuild the scooter in the reverse order.

Relevant article numbers
- 1008055 Throttle (potentiometer)

Tools used
- Screwdriver, crosshead

Notice
- N.a.

1



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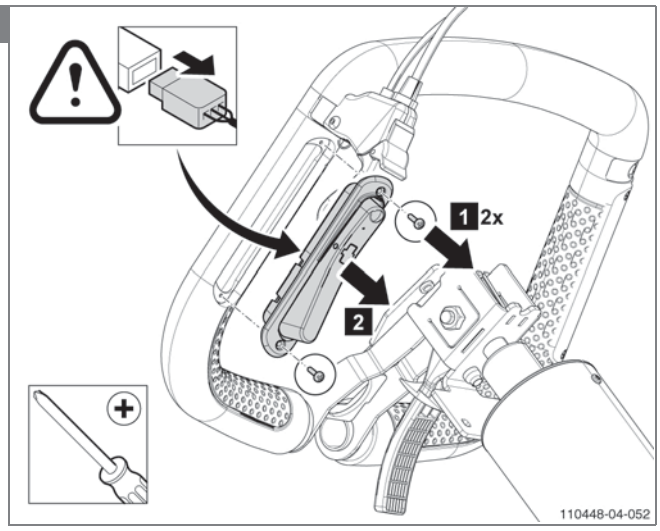


Replacing the tiller PCB

Preparation
- Switch off the scooter with the ignition key.
- Disconnect the batteries.

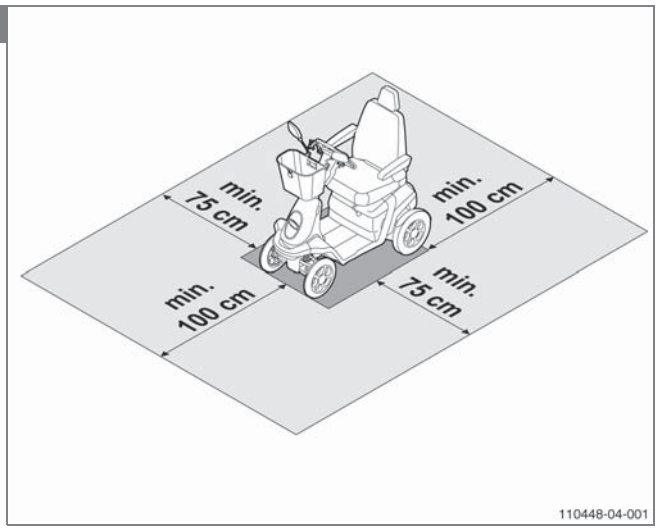
Instructions
The following operations are required to replace the tiller PCB:
Note! Suitable work area required!
- Remove the basket and the mounting bracket for the mirrors.
- Remove the two bolts and remove the front tiller cover.
- Remove the nut, the four Ejot screws and the dashboard.
- Disconnect all connectors from the tiller PCB.
- Remove the three Ejot screws to remove the tiller PCB.
- Mount the new tiller PCB.
- Rebuild the scooter in the reverse order.

Relevant article numbers
- 9007265 Tiller PCB (ID-no PBxxxxx only)
- 9007572 Tiller PCB Basic (ID-no QBxxxxx onwards)
- 9007374 Tiller PCB Dual control (ID-no QBxxxxx onwards)
- 9007373 Tiller PCB Full option (ID-no QBxxxxx onwards)

Tools used
- Socket, 10 mm
- Screwdriver, crosshead

Notice
- Make sure the scooter is switched off.

1



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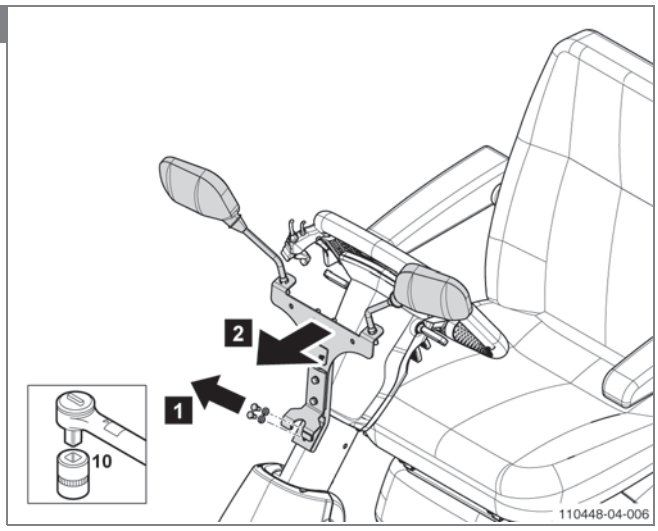

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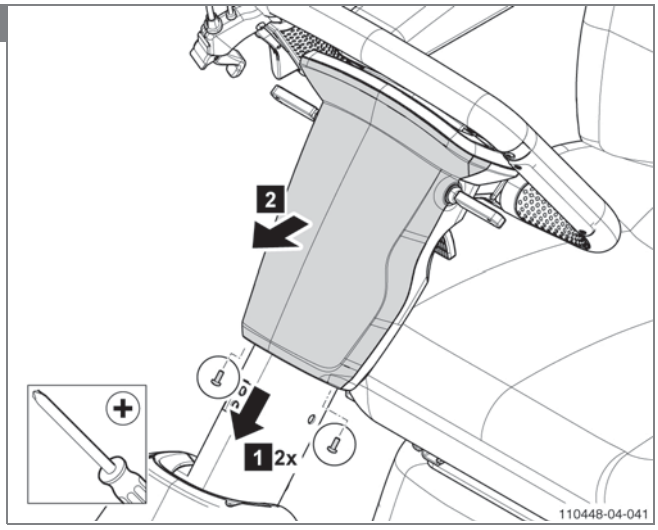

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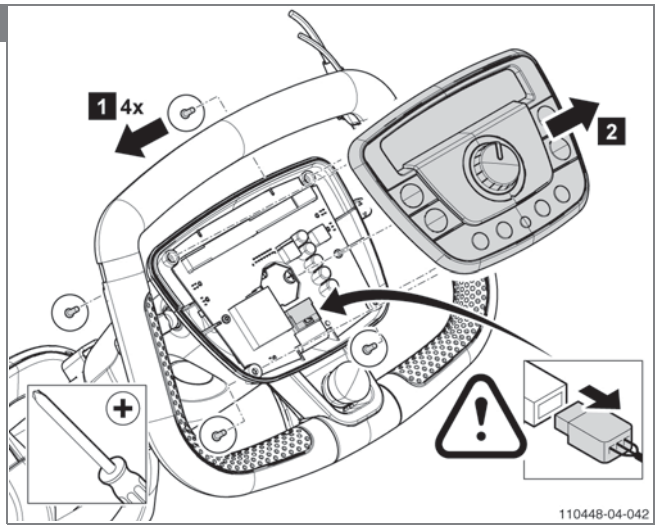

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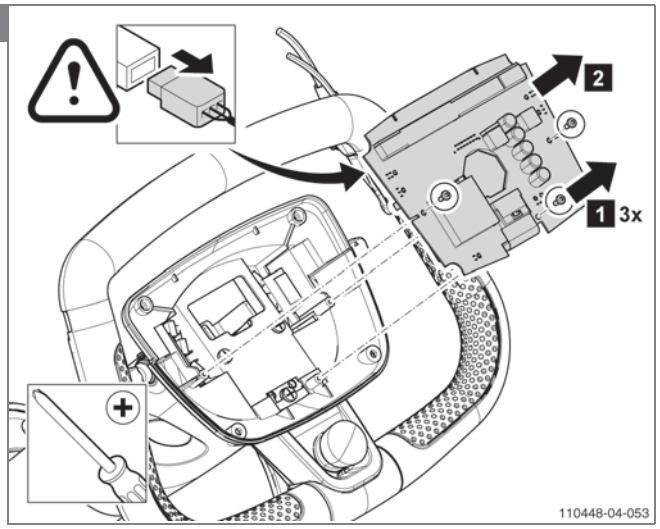


Replacing the stop switch

Preparation
- Switch off the scooter with the ignition key.
- Disconnect the batteries.

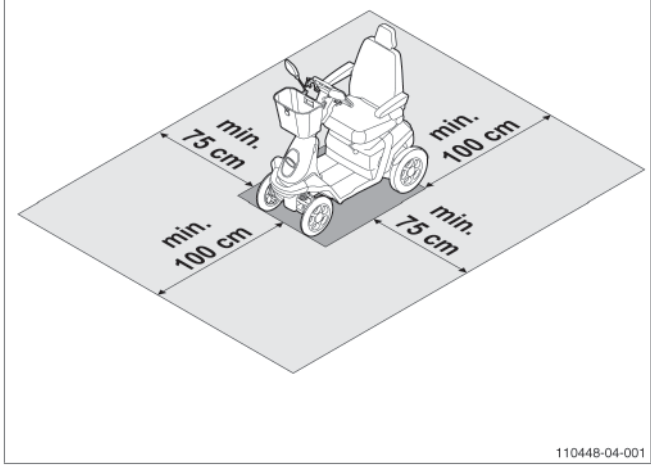
Instructions
The following operations are required to replace the stop switch:
Note! Suitable work area required!
- Remove the basket and the mounting bracket for the mirrors.
- Remove the two bolts and remove the front tiller cover.
- Remove the nut, the four Ejot screws and the dashboard.
- Disconnect all connectors from the tiller PCB.
- Remove the three Ejot screws to remove the tiller PCB.
- Remove the two recessed button head screws to remove the console bottom.
- Disconnect the connectors of the console bottom.
- Remove the recessed button head and Ejot screws, disconnect the connectors the stop switch and remove the top and bottom steering wheel covers.
- Mount the new stop switch.
- Rebuild the scooter in the reverse order.

Relevant article numbers
- 9006138 Emergency stop

Tools used
- Socket, 10 mm
- Screwdriver, crosshead

Notice
- Make sure the scooter is switched off.

1



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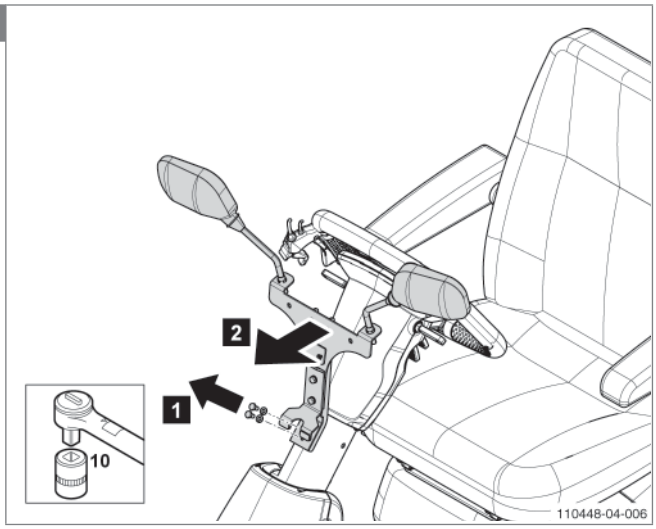

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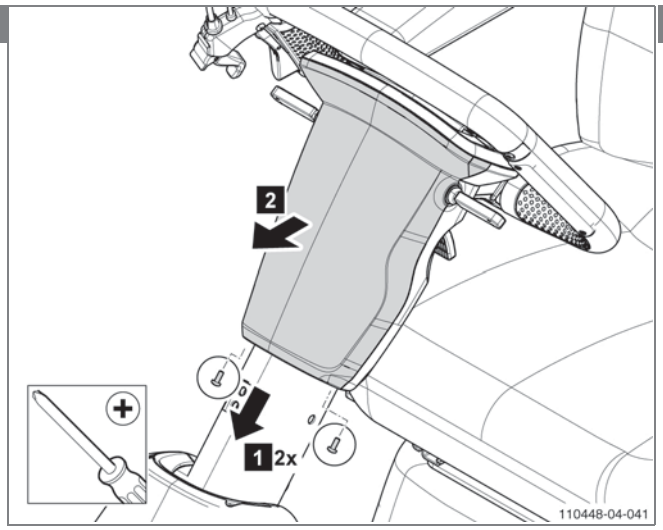
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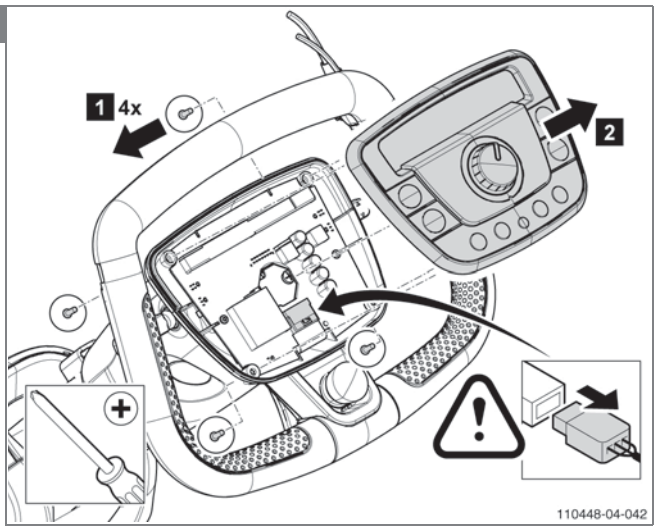
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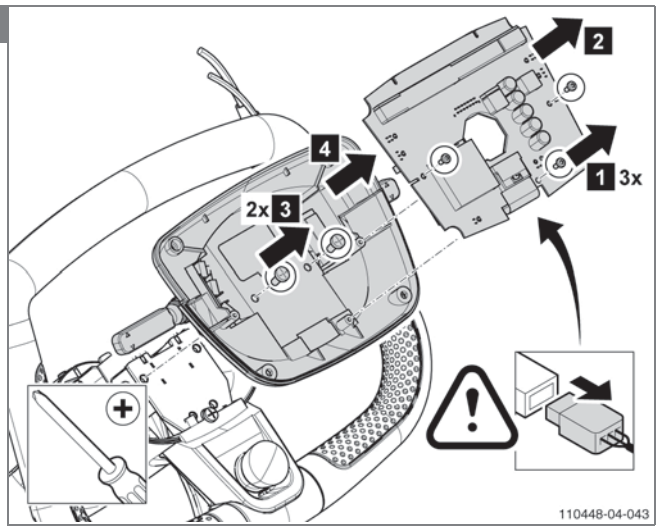
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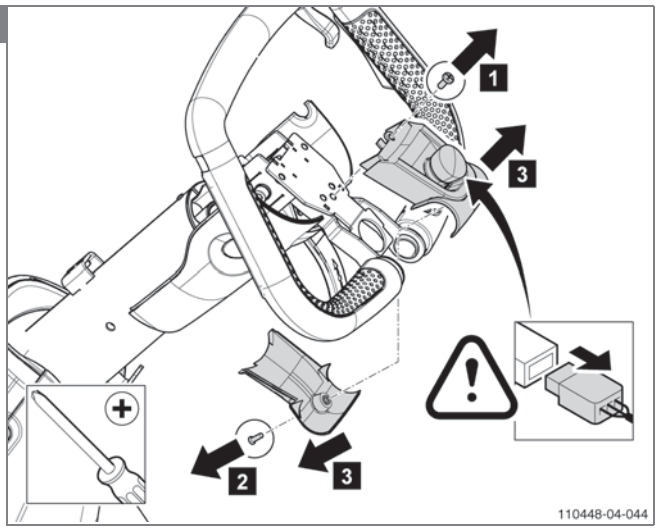
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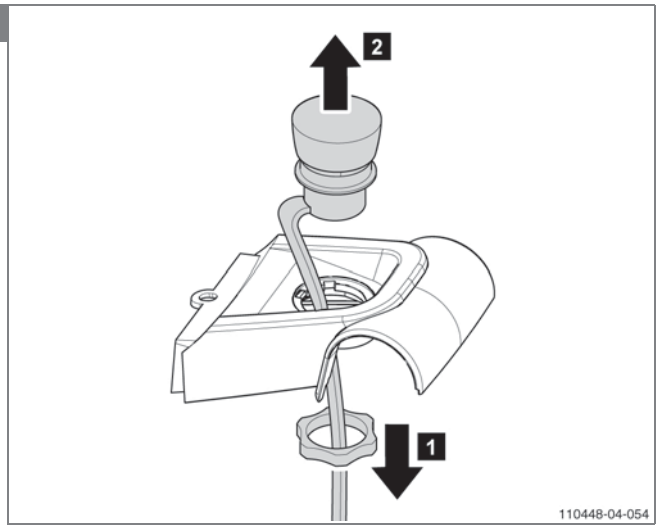
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5.4.6 Electronics

Replacing the controller (ID-no PBxxxxx only)

Preparation
- Switch off the scooter with the ignition key.
- Disconnect the batteries.

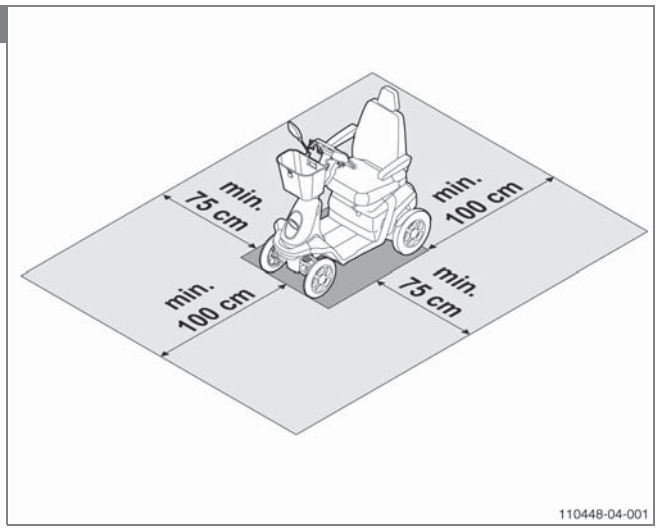
Instructions
The following operations are required to replace the controller:
Note! Suitable work area required!
- Remove the rear cover.
- Remove the S-drive cover.
- Disconnect all connectors from the S-drive controller.
- Remove the two hexagon head cap screws and remove the controller.
- Mount the new controller.
- Rebuild the scooter in the reverse order.

Relevant article numbers
- 9002457 S-drive controller 120A
- 9004513 S-drive controller 90A

Tools used
- Allen key, 5 mm

Notice
- In case of S-drive controller 90A watch out for motor harness and power harness.

1



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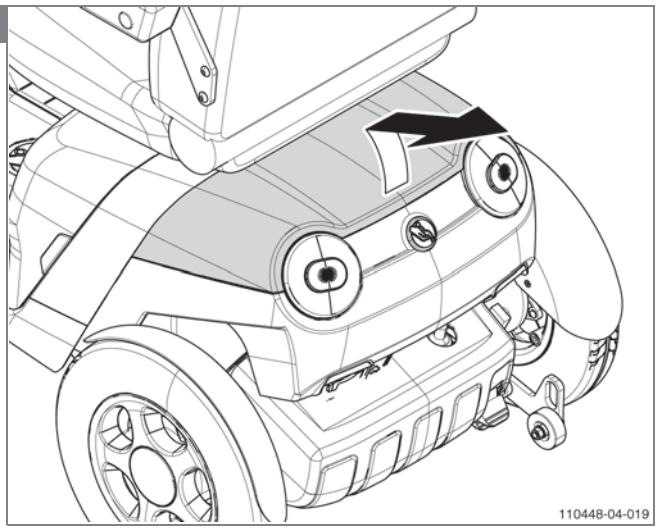

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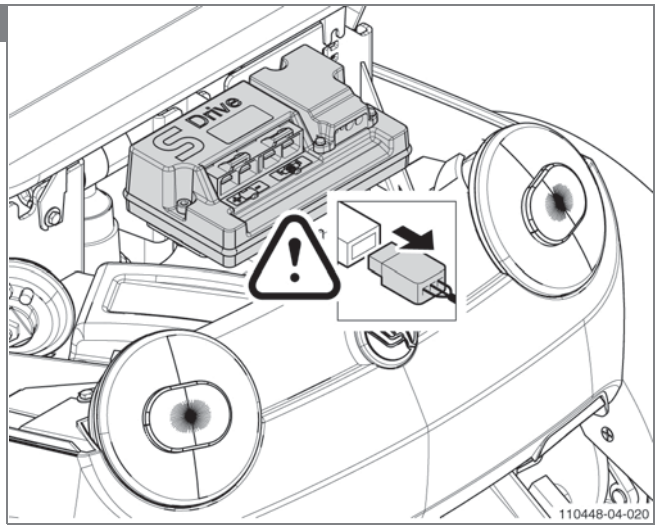

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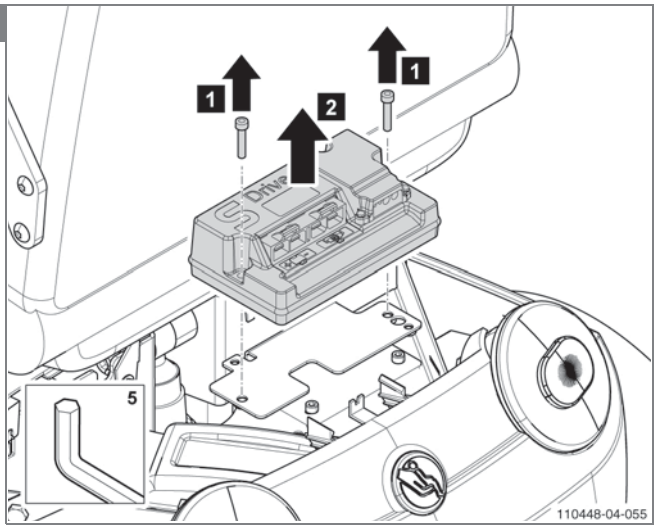


5.4.7 Covers front

Replacing the front tiller cover

Preparation
- Switch off the scooter with the ignition key.

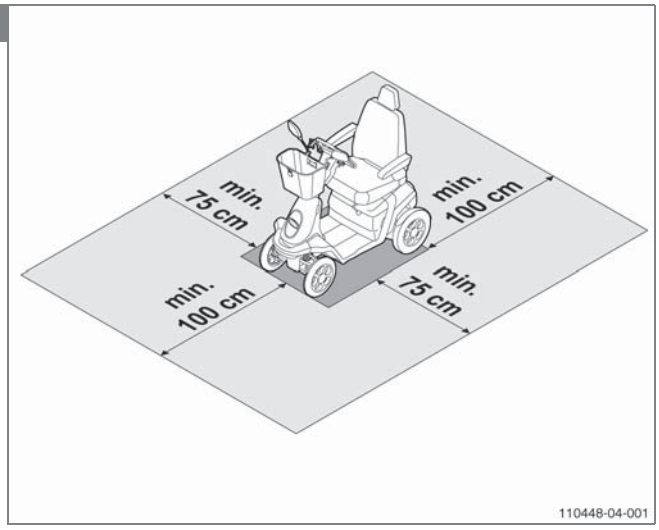
Instructions
The following operations are required to replace the front tiller cover:
Note! Suitable work area required!
- Remove the basket and the mounting bracket for the mirrors.
- Loosen the two bolts to remove the front tiller cover.
- Mount the new front tiller cover.
- Rebuild the scooter in the reverse order.

Relevant article numbers
- 9004442/9004445/9004448/9004451/9004454 Front tiller cover

Tools used
- Socket, 10 mm
- Screwdriver, crosshead

Notice
- Make sure the scooter is switched off.

1



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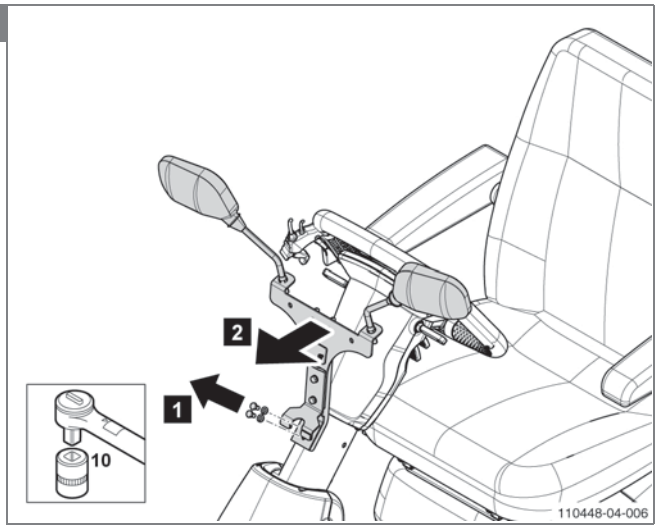

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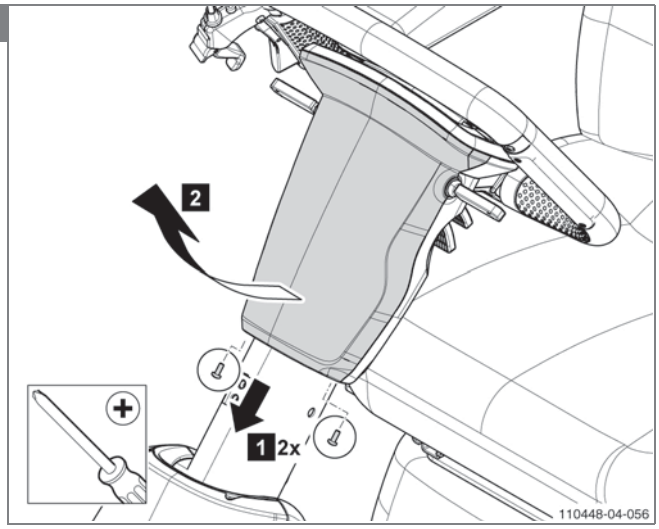


Replacing the front cover

Preparation
- Switch off the scooter with the ignition key.

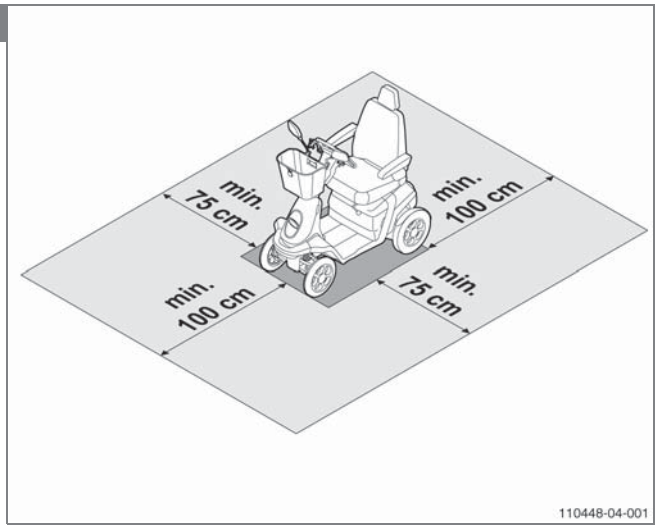
Instructions
The following operations are required to replace the front cover:
Note! Suitable work area required!
- Loosen the two bolts to remove the front cover.
- Disconnect the connector of the headlight.
- Take the head light cover out of the front cover.
- Put the head light cover back in the new front cover
- Rebuild the scooter in the reverse order.

Relevant article numbers
- 1015363/1015364/1015365/1015366/1015367 Front cover

Tools used
- Screwdriver, crosshead

Notice
- Make sure the scooter is switched off.

1



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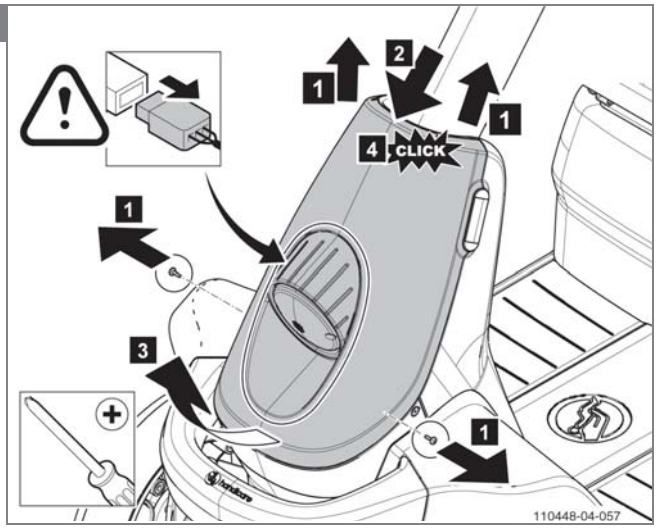
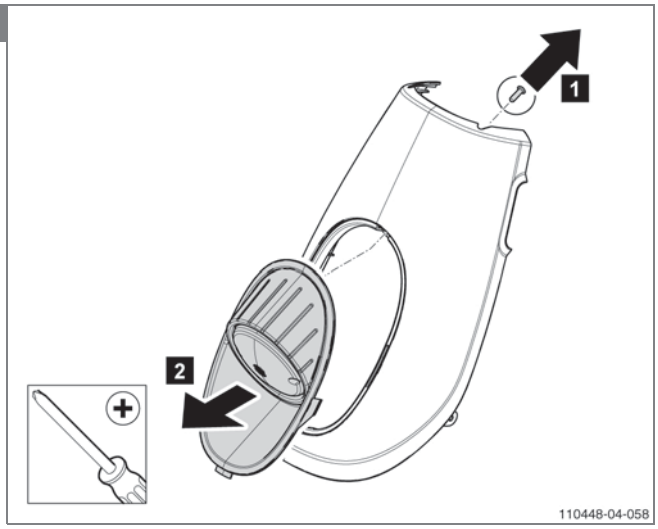


Note! *After you have removed the screws, push the locking clip at the top, pull at the bottom the cover with a loud CLICK from the front cover rear part.*

3



5.4.8 Covers rear

Replacing the rear cover

Preparation
- Switch off the scooter with the ignition key.

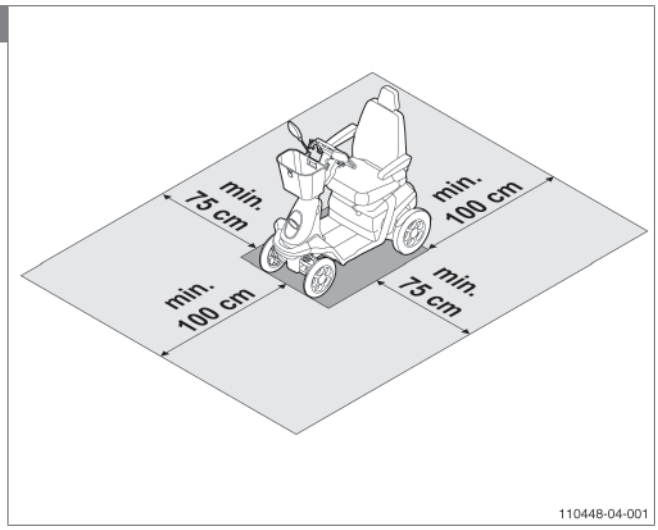
Instructions
The following operations are required to replace the rear cover:
Note! Suitable work area required!
- Remove the rear cover.
- Place the new rear cover

Relevant article numbers
- 1012537/1012538/1012539/1012540/1012541 Rear cover

Tools used
- N.a.

Notice
- N.a.

1



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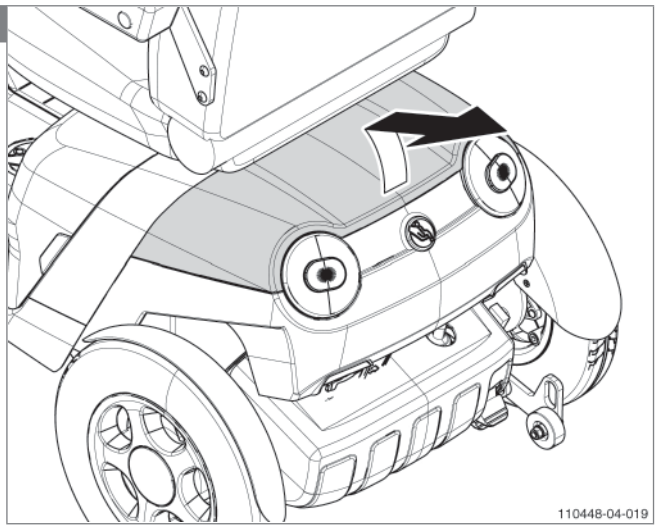


5.4.9 Accessories

Mount the crutch holder, horizontal

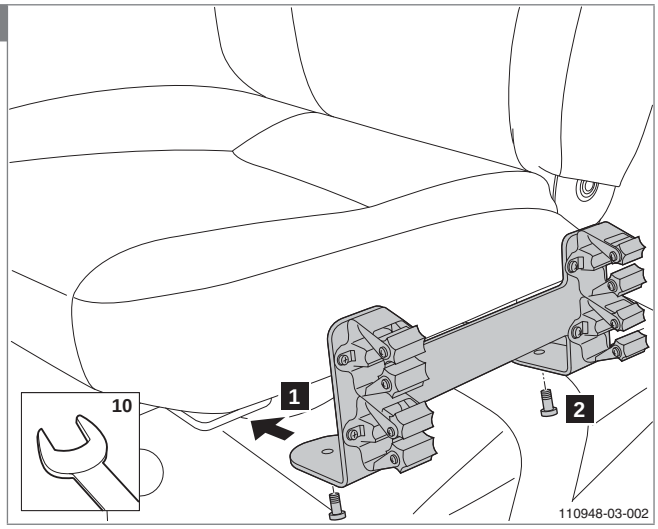
Preparation
- Switch off the scooter with the ignition key.

Instructions
The following operations are required to mount the horizontal crutch holder:
Note! Suitable work area required!
- Mount the horizontal crutch holder with two bolts on the seat frame.

Relevant article numbers
- 1003095 Crutch holder mounted to chair, horizontal

Tools used
- Open ended spanner, 10 mm

1



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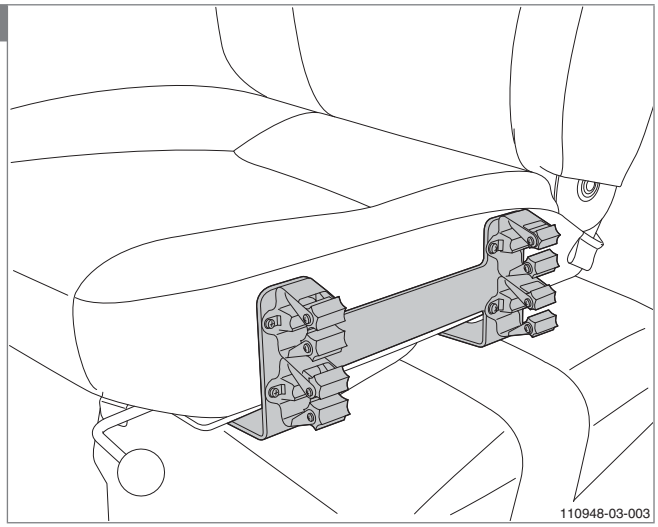


Mount the crutch holder, vertical

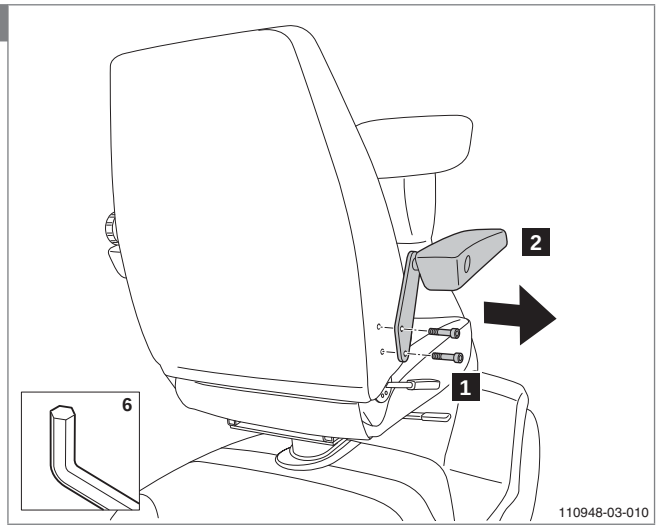
Preparation
- Switch off the scooter with the ignition key.

Instructions
The following operations are required to mount the vertical crutch holder:
Note! Suitable work area required!
- Remove the armrest from the backrest frame.
- Mount the vertical crutch holder and the armrest with two bolts back on the backrest frame.

Relevant article numbers
- 2537 Crutch holder mounted to chair, vertical

Tools used
- Allen key, 6 mm

1



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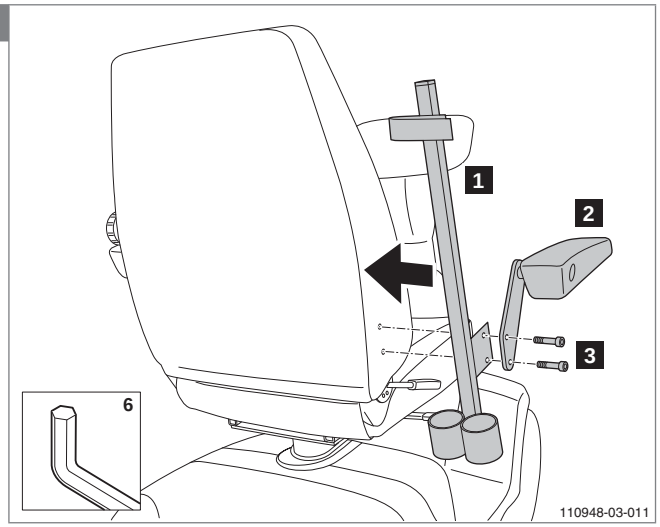


Mount the crutch holder, chassis

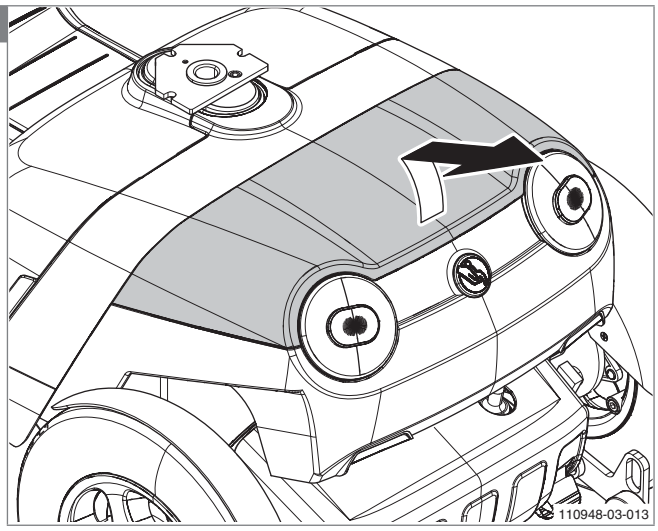
Preparation
- Switch off the scooter with the ignition key.

Instructions
The following operations are required to mount the crutch holder on the chassis:
Note! Suitable work area required!
- Remove the rear cover.
- Remove the two hexagon bolts and washers to remove the rear bumper.
- Mount the crutch holder bracket on the rear frame side of the electronics compartment.
- Drill two holes in the rear bumper (drill location is indicated on the inside).
- Replace the rear bumper and mount the crutch holder via the bumper on the bracket.

Relevant article numbers
- 1012515 Crutch holder mounted to chassis

Tools used
- Torque wrench, socket, 7 mm
- Metal drill, 4 mm
- Drill

1



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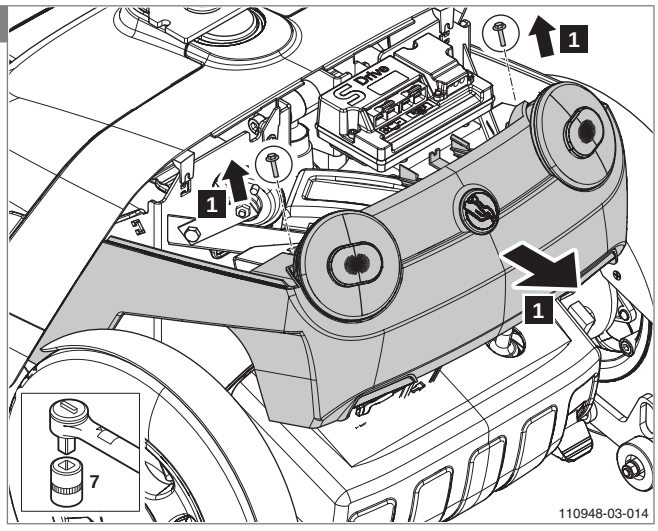

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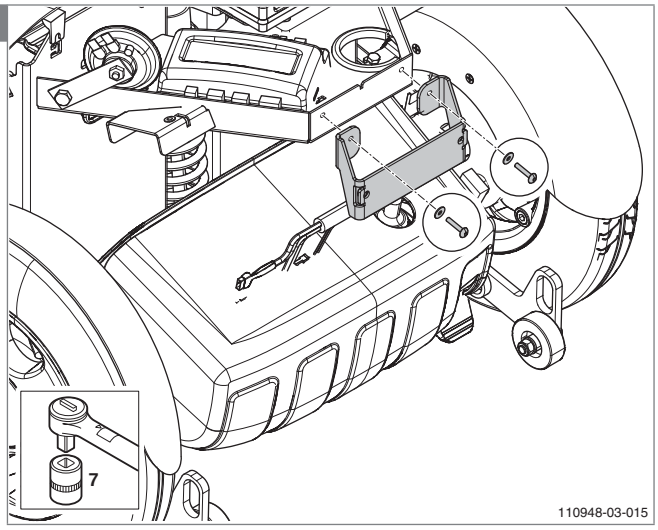

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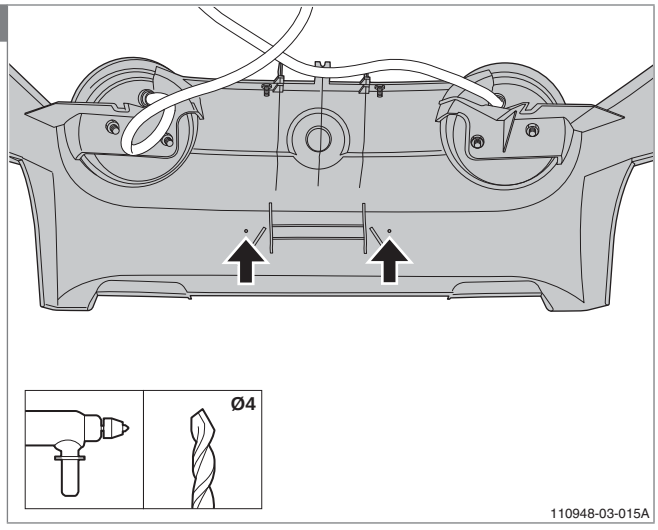

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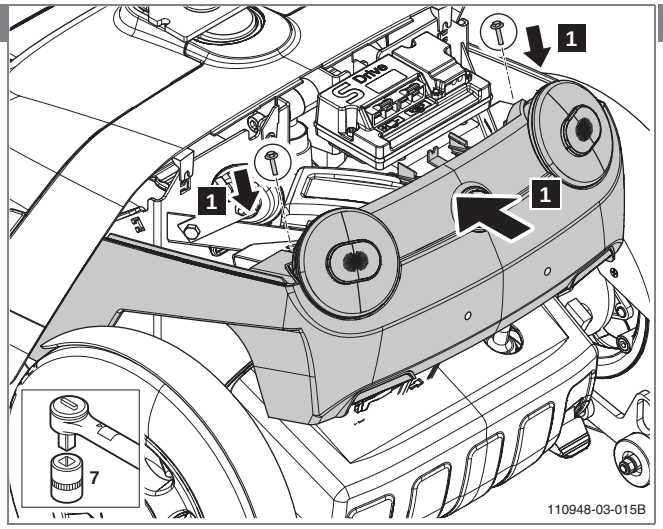

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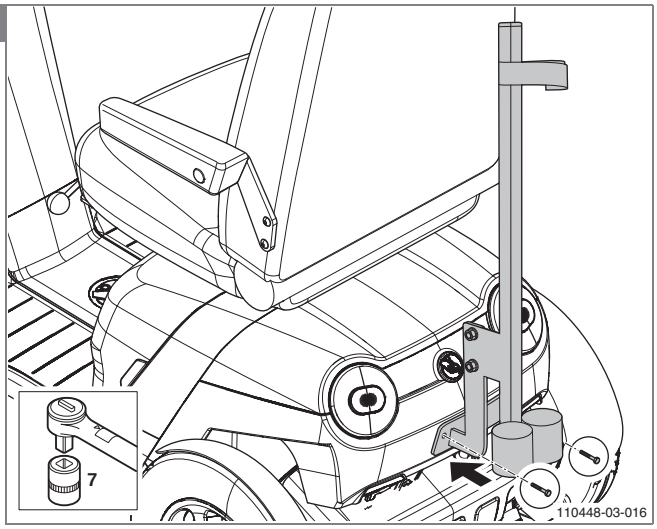


Mount the anti tip wheels

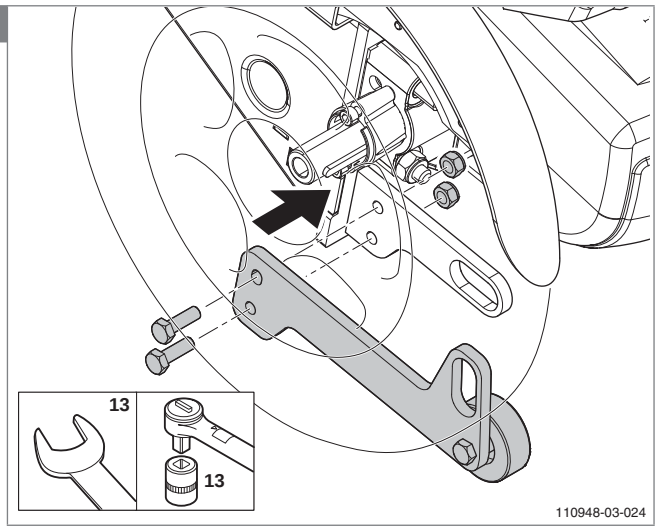
Preparation
- Switch off the scooter with the ignition key.
- Use a lifting device to raise the scooter clear of the ground.

Instructions
The following operations are required to mount the anti tip wheels:
Note! Suitable work area required!
- Mount with the two bolts on every side on the rear frame an anti tip wheel.

Relevant article numbers
- 1015401 Anti tip set

Tools used
- Open ended spanner, 13 mm
- Socket, 13 mm

1



Mount the luggage carrier

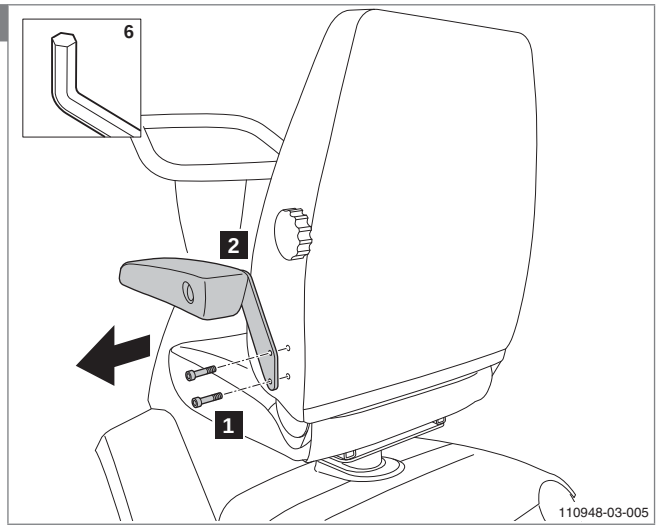
Preparation
- Switch off the scooter with the ignition key.

Instructions
The following operations are required to mount the luggage carrier:
Note! Suitable work area required!
- Remove the armrest from the backrest frame.
- Mount with the two bolts on every side the luggage carrier on the backrest frame.

Relevant article numbers
- 1001813 Luggage carrier

Tools used
- Allen key, 6 mm

1



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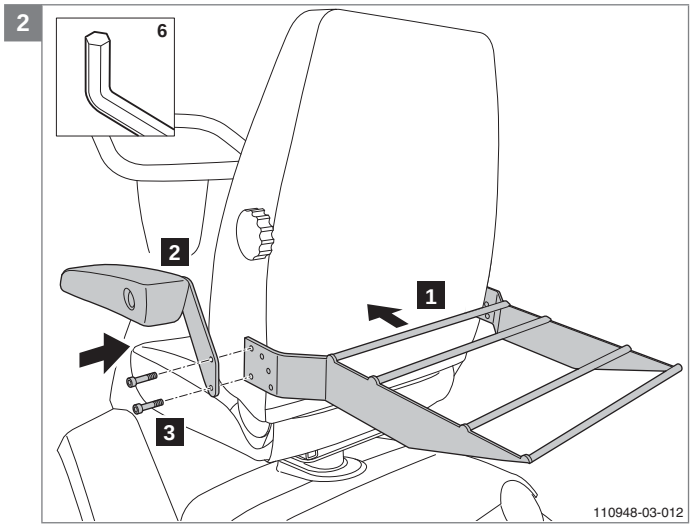


Mount the walking aid holder

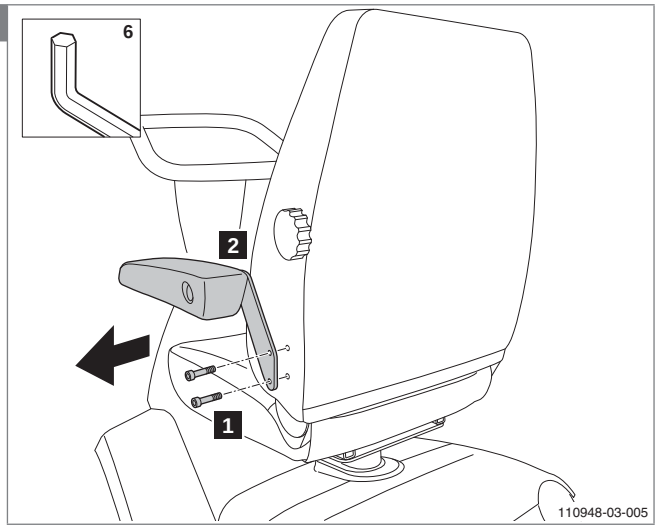
Preparation
- Switch off the scooter with the ignition key.

Instructions
The following operations are required to mount the walking aid holder:
Note! Suitable work area required!
- Remove the armrest on both sides from the backrest frame.
- Mount with the two bolts on every side the walking aid holder on the backrest frame.

Relevant article numbers
- 1001814 Walking aid holder

Tools used
- Allen key, 6 mm

1



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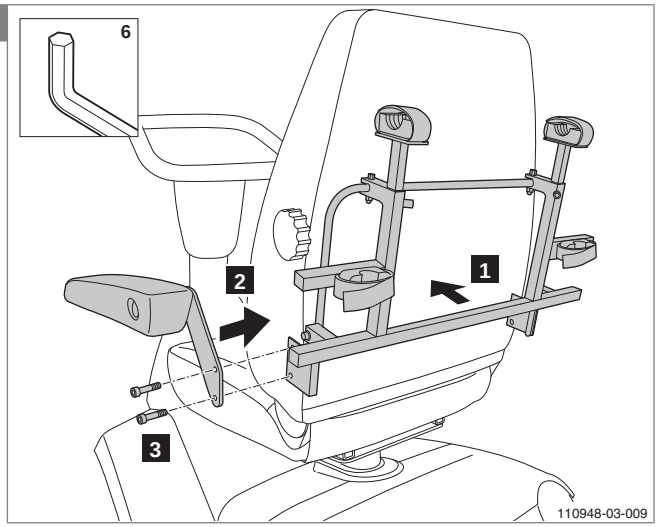


Mount the mounting bracket

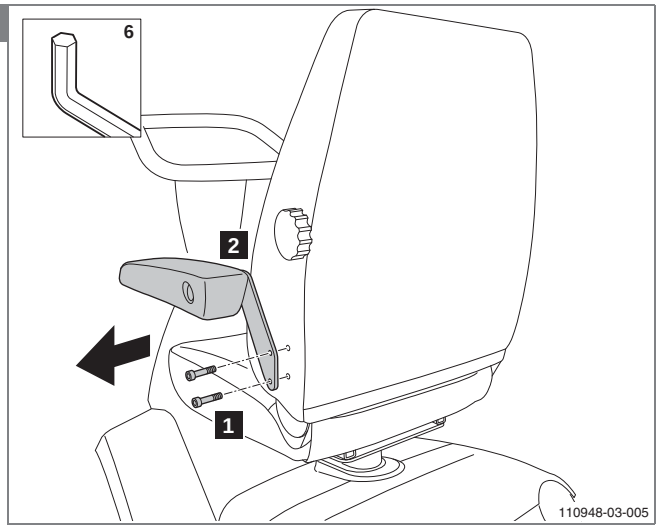
Preparation
- Switch off the scooter with the ignition key.

Instructions
The following operations are required to mount the mounting bracket:
Note! Suitable work area required!
- Remove the armrest on both sides from the backrest frame.
- Mount with the two bolts on every side the mounting bracket on the backrest frame.
- Put the basket or knapsack on the mounting bracket.

Relevant article numbers
- 9000620 Mounting bracket rear
- 4930 Basket
- 9000701 Trolley bag
-

Tools used
- Allen key, 6 mm

1



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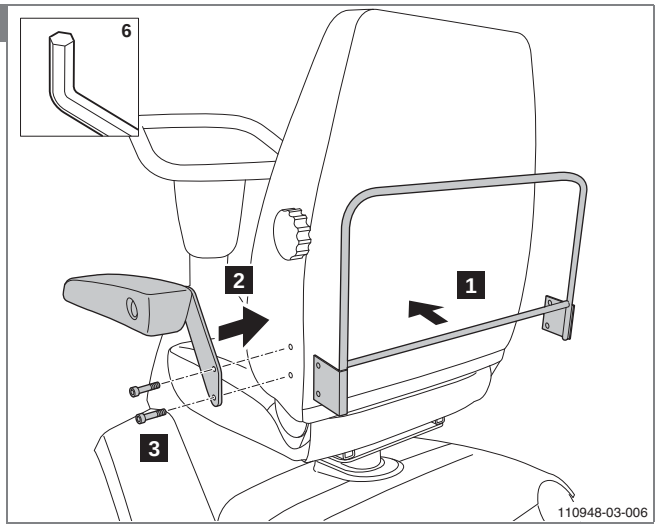

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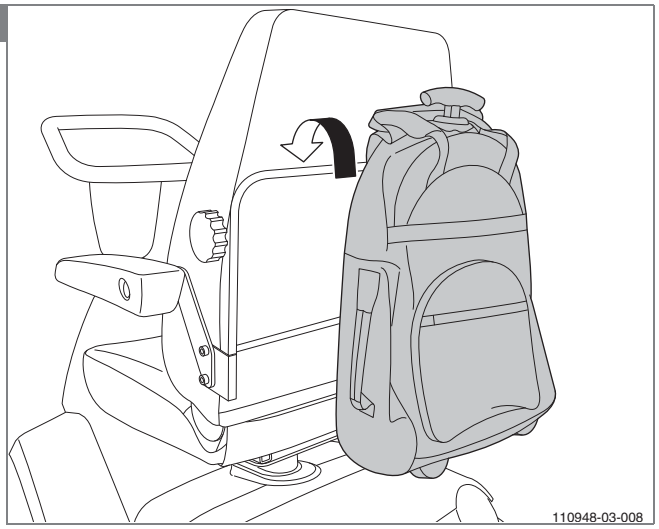
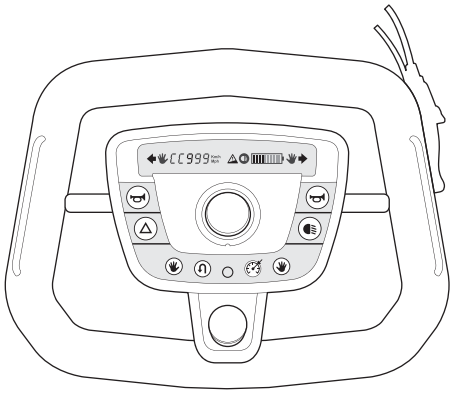


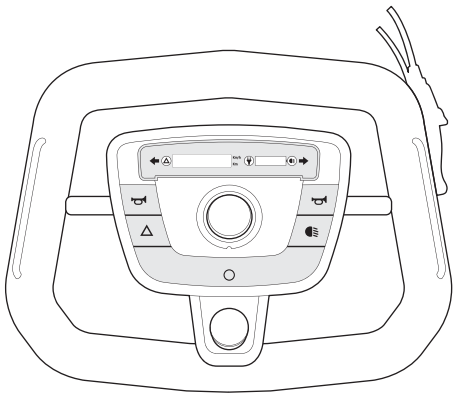
Mount the foot throttle

Preparation
- Switch off the scooter with the ignition key.
- Disconnect the batteries.

Instructions



Note! This procedure is intended for the Throphy 20 with the latest electronics. In case your Trophy 20 has the dashboard as above, you have the latest version electronics. Contact Handicare in case you have the following dashboard (older version electronics).

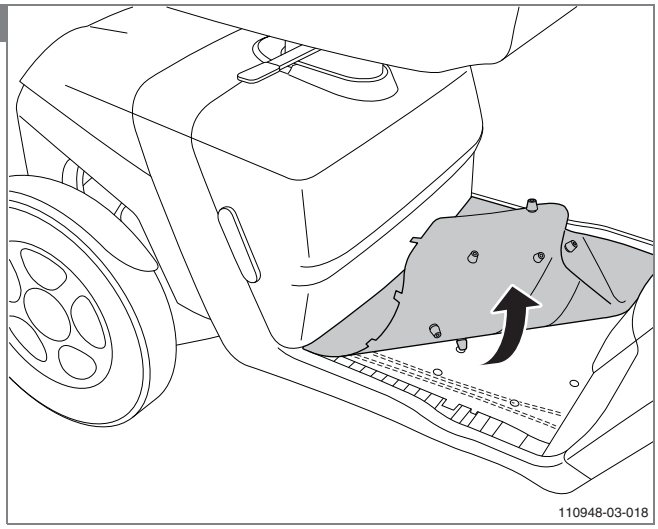


The following operations are required to mount the foot throttle:
Note! Suitable work area required!
Note! Remove always one finger-control! Replace it with cover steering wheel 9007423.
- Loosen the floor mat from the frame.
  Note! For mounting the foot throttle on the floor mat you have to drill two holes in the floor mat and frame. Be sure you will not damage any cables mounted under the frame!
- Determine the exact laying of the cables under the frame.
- Reposition the cables in case they will be damaged while drilling the two holes.
- Replace the floor mat and position the foot throttle mounting plate on the floor mat.
- Drill the holes and mount the foot throttle mounting plate.
- Mount the foot throttle on the mounting plate.
- Guide the cable trough and under the frame, to the electronics compartment on the backside of the scooter.
- Remove the rear cover.
- Connect the plug to the socket in the electronics compartment and replace the rear cover.

Relevant article numbers
- 9007083 Foot throttle Advanced electronics
- 1008730 4,8x19 self tapping screw

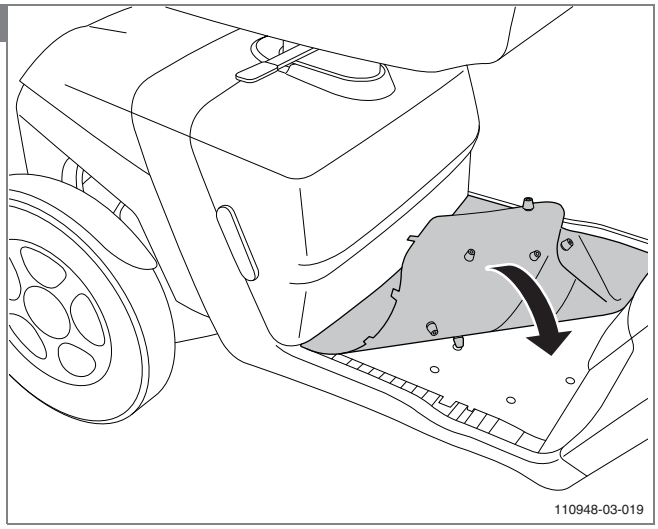
Tools used
- Allen key, 3 mm
- Metal drill, 6 mm
- Drill
- Screwdriver, crosshead

1



Determine the exact laying of the cables under the frame.
Note! *Reposition the cables in case they will be damaged while drilling the two holes.*

2



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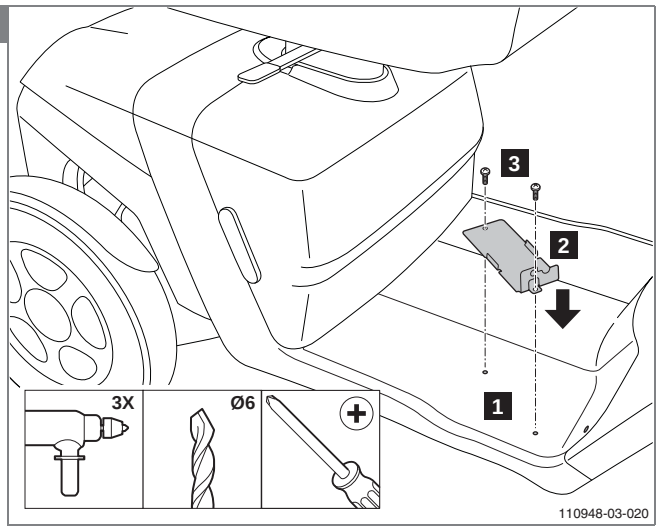
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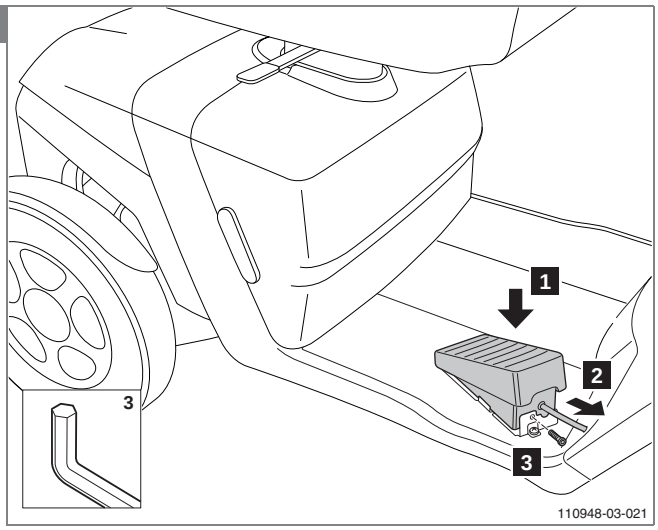
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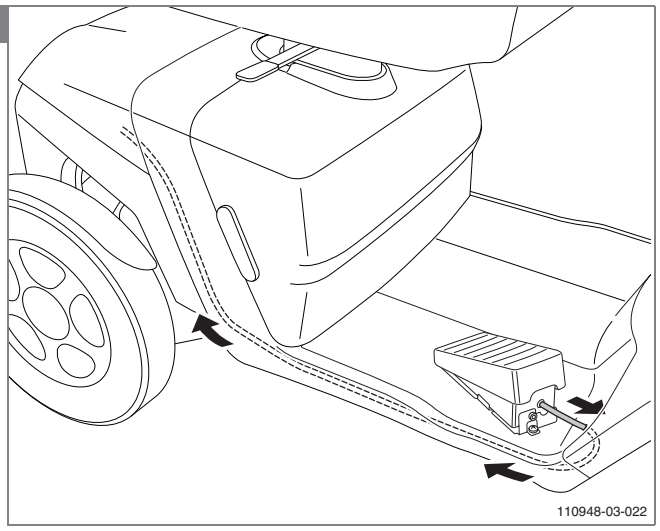
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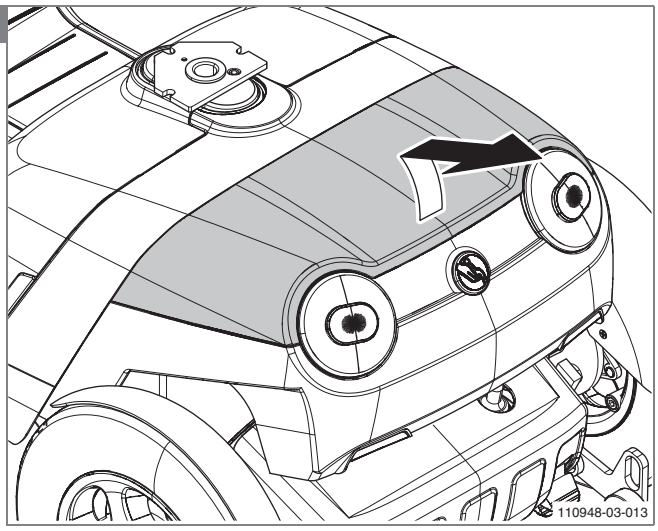
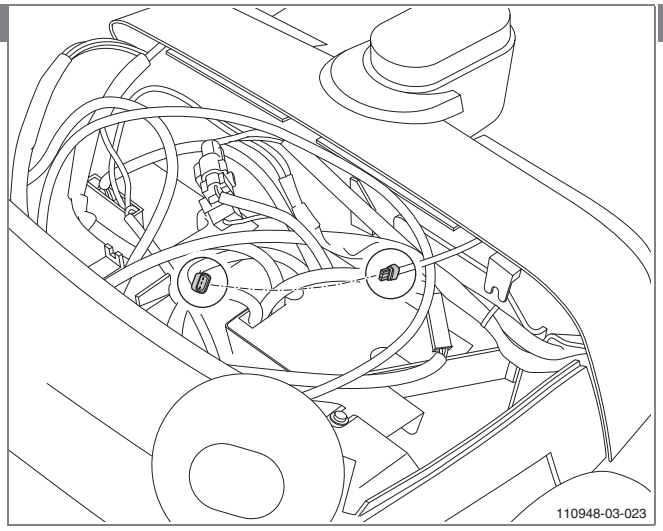
6


110948-03-013

7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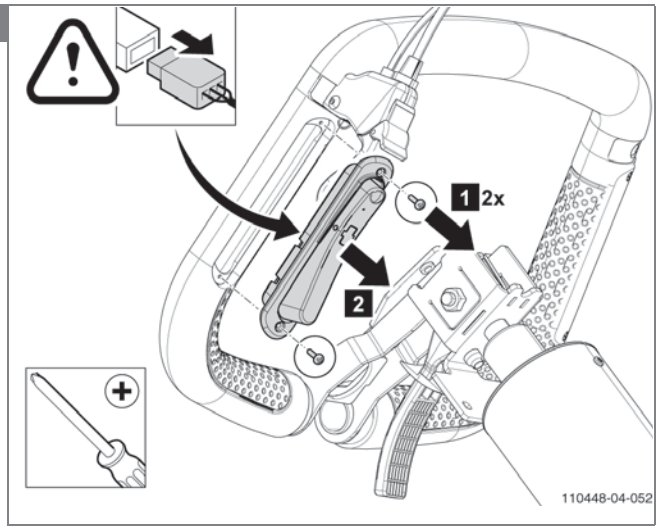
8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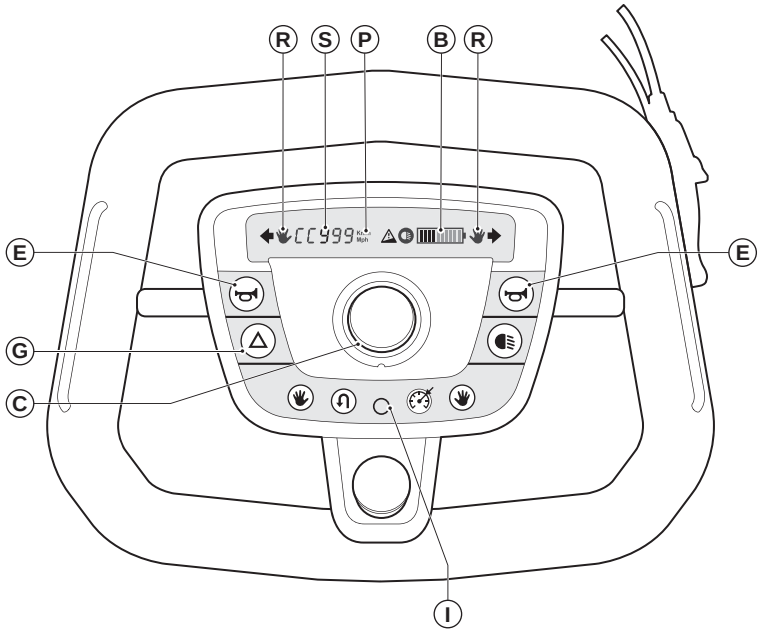
5.5 Display menu settings



Starting the service menu for ID-no PBxxxxx only

△ + horn	Kilometer total (user)	Hold the hazard light button and press the left horn button briefly
R	Reset total (user	Push the I button (3 sec.)
△ + horn	Kilometer total (scooter)	Hold the hazard light button and press the left horn button briefly
△ + horn	Hours-on total (scooter)	Hold the hazard light button and press the left horn button briefly
△ + horn	Battery voltage	Hold the hazard light button and press the left horn button briefly
	Leave dealer menu	Any other button

Starting the service menu from ID-no QBxxxxx onwards

Pushing the hazard-button (G) together with the claxon-button (E) more than 2 seconds, the service menu shall be visible.

- First information shown after starting the service menu is the “Total km-1”
- Pushing the hazard button again (G) allows you to scroll through the menu shown below.
- If any other button (other than the DSS (I), horn (E), hazard button (G)) is switched during the service menu, the display returns to the user menu and will show “actual speed”

When the batteries of the scooter are removed the service information shall not get lost for at least 1 year.

The display will blink at a frequency of 1-2HZ, indicating this value can be changed.

1. Total km-1 (S)
   The amount of km the scooter has driven after the last time this value was reset.
   Resettable by pressing the DSS (I) switch ≥ 2 seconds.

2. Total km-2 (S)
   The amount of km the scooter has ever driven in its total life.

3. Actual battery voltage (B)
   The actual battery voltage measured real time

4. Hours ON
   The amount of hours the scooter has been switched on in its life.
   First one character of the display show: H

5. Hours Driven
   The amount of hours the scooter has driven more than 5% of its maximum speed in its life.
   First one character of the display show: h

6. Software version
   First one character of the display show: F

7. Signal Actual throttle input: Range
   Actual input of the active throttle available (R)
   First characters of the display show: C
   The Icons on the tiller display will indicate the active throttle:
   - right hand is lit: right hand side throttle is active
   - left hand is lit: left hand side throttle is active
   - no hand icons are lit: foot throttle is active

   Foot throttle information is converted by the MC into a drive signal. This signal will be presented here. OK

8. Miles / hour reset (P)
   Set speed and distance calculations to km or miles.
   - Km icon on display is shown = km: km per hour
   - m icon on display is shown = miles: miles per hour

   Default: km
   Change by pressing the DSS (I) switch ≥ 2 seconds.

9. Scooter type selection.
   This reflects the diameter of the wheels used.
   - “t30” Trophy speed algorithm (Trophy 30)
   - “t20” Trophy speed algorithm (Trophy 20)

   Default: “t30”
   Change by pressing the DSS (I) switch ≥ 2 seconds.

10. This reflects if a beeping sound is enabled
    - "0" no beep when driving backward
    - "1" beeping when driving backward

    default: "1"
    Change by pressing the DSS (I) switch ≥ 2 seconds
    First one character of the display show: b

Setting the options

Not all options are standard available. Some options are only available as ordered at Handicare. Not activated values will not be shown in the service menu.

11. Cruise Control enable (S)
    - “0” disabled
    - “1” enabled

    Default: “0” = disabled
    Can only be changed if Activate CC control option is set to “1” = enabled
    Change by pressing the DSS (I) switch ≥ 2 seconds.
    First two characters of the display show: CC

12. Manual / intelligent throttle switch
    - “0” off
    - “1” Manual Throttle Switching (MTS)
    - “2” Intelligent Throttle Switching (ITS)
    - “3” ITS and MTS active

    Default: “0” = off
    Can only be changed if Activate Throttle switch option is set to “1” = enabled
    Change by pressing the DSS (I) switch ≥ 2 seconds.
    First two characters of the display show: tS

6 Troubleshooting

If the scooter doesn't function, while the batteries are fully charged, check the following points.
A. Set the scooter off and then on again. Check if the problem is solved.
B. Check if all the battery connectors are properly attached and firmly connected.
C. Check whether the freewheel handle is in the DRIVE position.
D. Make sure the position of the speed controller has not changed.
E. If there is a problem, the lights of the battery condition meter flash. Use the table below to determine the cause of the problem.

Indication on the display	Description of problem	Corrective action
The complete LED bar flashes rapidly.	The Controller security has found something that causes a problem.	Switch off the scooter. Check all connectors. Check the condition of the batteries. Consult the manufacturer if the LED bar continues flashing after the scooter has been switched on.
The socket LED is lit continuously after the scooter is switched on.	Short circuit in the potentiometer. Cabling from the Tiller PCB to the controller interface is defective. Cabling from the Tiller PCB to the touch control is defective. Tiller PCB is defective.	Contact the manufacturer.
The first red LED of the LED bar is lit continuously.	The batteries require charging or there is a poor connection to the batteries.	Check all connections between the controllers and the batteries. If the connections are OK, try recharging the batteries.
LED bar left to right chase.	The batteries are being charged.	Disconnect the battery charger from the scooter.
Two LEDs of the LED bar are lit.	There is a poor connection to the motor.	Check all connections between the controller and the motor.
Three LEDs of the LED bar are lit.	There is a short circuit in the motor.	Check the motor cables or replace the motor.
Seven LEDs of the LED bar are lit.	The throttle was held in during start up. Speed potentiometer fault.	Restart the scooter without pressing the throttle. Check or replace the speed potentiometer.
Eight LEDs of the LED bar are lit.	The controller is malfunctioning.	Replace the controller.
Nine LEDs of the LED bar are lit.	The neutral handle is in the neutral position. The brake is malfunctioning.	Put the neutral handle in the drive position. Check the connections between the brake and the controller. Replace the brake.
Ten LEDs of the LED bar are lit.	The battery is malfunctioning.	Check the connections between the batteries and the controller. Check the batteries.

The table below provides explanation for the trip codes that can be indicated by the controller. These trip codes can be read with the manual programming unit (SP1) or the mobility programmer PG.

LED code	Trip code	Error type	Explanation
1	2c00	Low battery error	Low battery voltage
1	2c01	Low battery error	Low battery voltage
2	3B01	Motor fault 1	Motor disconnected
3	1400	Bridge fault 1	Motor wiring fault
4	7000	Startup with push selected	Parking brake off
4	7001	Push activated in drive mode	Parking brake off
6	1e03	Inhibit activated	Inhibit active
7	0810	Tiller fault 1	Throttle trip
7	0814	Tiller reference error	Throttle trip
7	0815	Tiller lo reference error	Throttle trip
7	0816	Tiller high reference iso error	Throttle trip
7	0817	Tiller lo reference error	Throttle trip
7	0300	Speed Limit Potentiometer wiper open	Throttle trip
7	1d02	Front end spec change trip	Throttle potentiometer trip
7	2f01	Tiller displaced error	Throttle displaced at power up
8	0002	Eeprom calibration checksum error 2	Possible controller trip
8	0003	Eeprom program checksum error 2	Possible controller trip
8	0100	Running checksum 1	Possible controller trip
8	0203	Eeprom calibration checksum error 1	Possible controller trip
8	0204	Eeprom program checksum error 1	Possible controller trip
8	1501	Brake fault 2	Possible controller trip
8	1705	Relay fault 1	Possible controller trip
8	1802	Watchdog voltage ref error	Possible controller trip

8	1805	Salty finger ref error	Possible controller trip
8	1b20	Both clamps measuring current	Possible controller trip
8	2102	Progres counter error	Possible controller trip
8	2d01	Front end spec change trip	Possible controller trip
8	3100	Battery bridge difference error 1	Possible controller trip
8	3102	Temperature settings incorrect	Possible controller trip
8	3210	No internal timers	Possible controller trip
8	3211	Internal timer out of range	Possible controller trip
8	3212	Atod readings not finished before next read	Possible controller trip
8	3213	Unknown mux channel	Possible controller trip
8	3600	Hardware error	Possible controller trip
8	3601	Test trip latch 1	Possible controller trip
8	3602	Test trip latch 2	Possible controller trip
8	3603	Test trip latch 3	Possible controller trip
8	3608	Test trip latch 8	Possible controller trip
8	3609	Test trip latch 9	Possible controller trip
8	360a	Test trip latch 10	Possible controller trip
8	360b	Test trip latch 11	Possible controller trip
8	360c	Test trip latch 12	Possible controller trip
8	360d	Test trip latch 13	Possible controller trip
8	360e	Test trip latch 14	Possible controller trip
8	4401	Generic ctrl error	Possible controller trip
9	1500	Brake fault 1	Solenoid brake fault
9	1502	Brake over current error	Solenoid brake fault
10	1600	High battery error	High battery voltage

7 Technical product information

7.1 CE Declaration and standards

This product complies with the regulations of the Medical Devices Directive and therefore bears the CE mark.

Standard	Definition/description	Weight test dummy
EU guideline 93/42 EEC	Applicable as mentioned in Appendix 1	N/A
NEN-EN 12182 (2009)	The requirements from EN12182 as mentioned in NEN-EN 12184 (1999): Technical aids for the handicapped – General requirements and test methods October 1997	160 kg
NEN-EN 12184 (2009) Class B	Electric wheelchairs, scooters and accompanying battery chargers – Requirements and test methods 2009	160 kg
ISO 7176-8	Requirements and test methods for static, impact and fatigue strengths July 1998	160 kg
ISO 7176-9	Climate tests for electric wheelchairs and scooters	N/A
ISO 7176-14	Requirements and test methods for control systems for electric wheelchairs 1997	N/A
ISO 7176-16	Requirements for resistance to ignition of upholstered parts May 1997	N/A

7.2 Technical specifications

Manufacturer	Handicare®
Model	Trophy 20 3 wheels (3W) Trophy 20 4 wheels (4W)
Maximum user weight	160 kg (25.2 stone)

Description		3W	4W
Total length	mm (inches)	1265 (49.8)	1265 (49.8)
Total width	mm (inches)	660 (26)	660 (26)
Minimum height*	mm (inches)	740 (29.1)*	740 (29.1)*
Total weight excluding batteries	kg (stones)	92 (14.5)	102 (16.1)
Total weight including batteries (74 Ah C20)	kg (stones)	140 (22)	150 (23.6)
Weight of heaviest component	kg (stones)	70 (11)	80 (12.6)
Static stability in the downward direction	°	> 13	> 13
Static stability in the upward direction	°	> 13	> 13
Lateral static stability	°	> 13	> 13
Distance range (ISO 7176-4)**	km (miles)	45 (28)	45 (28)
Dynamic stability (max. safe slope)	°	9	9
Maximum speed forwards	km/h (mph)	12 (7.5) / Alpine	12 (7.5) / Alpine
Back angle, Captain Seat	°	0 / 103 - 126	0 / 103 - 126
Seat depth, Captain Seat	mm (inches)	445 (17.5)	445 (17.5)
Seat width, Captain Seat	mm (inches)	457 (18)	457 (18)
Back height (excl. headrest), Captain Seat	mm (inches)	406 (16)	406 (16)
Seat height (to platform), Captain Seat	mm (inches)	350*** / 450 - 535 (13.8 / 17.7 - 21.1)	350*** / 450 - 535 (13.8 / 17.7 - 21.1)
Armrest height, Captain Seat	mm (inches)	229 - 273 (9 - 10.7)	229 - 273 (9 - 10.7)
Distance between armrests, Captain Seat	mm (inches)	457 - 610 (18 - 24)	457 - 610 (18 - 24)
Back angle, Master Seat	°	45 - 85 - 180	45 - 85 - 180
Seat depth, Master Seat	mm (inches)	430 (17)	430 (17)
Seat width, Master Seat	mm (inches)	500 (19.7)	500 (19.7)
Back height (excl. headrest), Master Seat	mm (inches)	550 (21.7)	550 (21.7)
Seat height (to platform), Master Seat	mm (inches)	350*** / 425 / 535 (13.8/16.7/21.1)	350*** / 425 / 535 (13.8/16.7/21.1)
Armrest height, Master Seat	mm (inches)	150 - 340 (5.9 - 13.4)	150 - 340 (5.9 - 13.4)
Distance between armrests, Master Seat	mm (inches)	500 (19.7)	500 (19.7)
Turning radius (ISO 7176-5)	mm (inches)	1030 (40.6)	1600 (63)
Reversing width	mm (inches)	1460 (57.5)	1810 (71.3)
Obstacle height (max. user weight)	mm (inches)	80 (3.1)	80 (3.1)
Ground clearance (max. user weight / loaded)	mm (inches)	70 (2.8)	70 (2.8)

Test data	
Test weight	160 kg (25.2 stone)

Operating force	
Drive lever operation	< 20 [N]
Resetting the automatic fuse (circuit breaker)	< 60 [N]
Electronic switches	< 13.5 [N]
Connecting the charger plug	< 60 [N]

Technical specifications for wheels		
Front wheel diameter (3W)	mm (inches)	320 x 60 (12.5 x 2.25)
Front wheel diameter (4W)	mm (inches)	320 x 60 (12.5 x 2.25)
Rear wheel diameter	mm (inches)	360 x 80 (14.2 x 3.1)
Tyre pressure 4W, front wheel	bar (psi)	2,5 (36.3)
Tyre pressure 4W, rear wheel	bar (psi)	3,5 (50.8)
Tyre pressure 3W, front wheel	bar (psi)	2,5 (36.3)
Tyre pressure 3W, rear wheel	bar (psi)	3,5 (50.8)

Batteries		
Maximum dimensions of batteries (lxbxh)	mm (inches)	262 x 173 x 211 (10.3 x 6.8 x 8.3)
Max. battery capacity C20	Ah	74
Max. battery capacity C5	Ah	63
Maximum permitted charging current	Ampère	8 RMS

* height of steering column, collapsed, excluding seat
** range dependent on user weight, condition of tyres, type of terrain, condition of battery and weather conditions with 74 Ah (C20)
*** seat height < 425 mm: an elevated footplate is required or by removing the slider

7.3 Controller settings PG Drives

PGDT S-Drive 90A (ID-no PBxxxxx only)

Speed Settings	Fast	Slow	Motor Settings		
Forward Acceleration (0,1 Seconds)	35	35	Current Limit Max (Amps)	60	
Forward Deceleration (0,1 Seconds)	16	16	Boost Drive Current (Amps)	90	
Reverse Acceleration (0,1 Seconds)	40	40	Boost Drive Time (Seconds)	10	
Reverse Deceleration (0,1 Seconds)	35	35	Current Foldback Threshold (Amps)	60	
Max Forward Speed (%)	100	100	Current Foldback Time (Seconds)	70	
Min Forward Speed (%)	10	10	Current Foldback Level (%)	59	
Max Reverse Speed (%)	25	25	Motor Cooling Time (Seconds)	660	
Min Reverse Speed (%)	5	5	Current Foldback Temperature (Deg C)	80	
Speed Limit Pot Enabled	On		Current Limit Min (Amps)	10	
			Motor Stall Timeout (Seconds)	0	(Mk ll only)
Operation Settings			Motor Compensation (milli Ohms)	25	
Sleep timer (minutes)	0		Anti Rollback Level	12	
Throttle Invert	Yes		Pull-away Delay (centi-Seconds)	0	
			Slope Factor	900	
Battery Settings			Anti Rollback Velocity	0	
Low battery Flash Level (Bars)	0		Bracking current limit (Amps)	90	(Mk ll only)
Cable Resistance (milli-Ohms)	50		Time foldback bracking current (Amps)	90	(Mk ll only)
Calibration Factor	100		Time foldback speed (%)	100	(Mk ll only)
Low Battery Alarm	Off		Enhanced motor compensation up (%)	190	(Mk ll only)
Trucharge Reset Voltage (Deci-Volts) (MK ll only)	200		Enhanced motor compensation down (%)	180	(Mk ll only)
			Enhanced motor compensation up gain	90	(Mk ll only)
Inhibit Settings			**Factory Settings**	**Max**	**Min**
Inhibit 1: Mode	1		Acceleration (0,1 Seconds)	100	1
Inhibit 1: Operation	Latching		Deceleration (0,1 Seconds)	100	1
Inhibit 1: Speed (%)	0		Forward Speed (%)	100	0
Inhibit 2: Mode	1		Reverse Speed (%)	100	0
Inhibit 2: Operation	Latching				
Inhibit 2: Speed (%)	0		**Throttle Settings**		
Inhibit 3: Mode	1		Throttle Type	1	0=Single-ended, 1=Wig-Wag 2=Unipolar
Inhibit 3: Operation	Non Latching		Throttle Deadband (%)	15	
Inhibit 3: Speed (%)	0		Throttle Gain (%)	140	
Aux Output: Mode	1		Throttle Operated at Power-up	2	0 = Drive, 1 = Inhibit, 2 = Trip
			Throttle Reference Test	On	
			Iso Test Resistor	Off	

General Settings		
Soft Stop	On	
Brake Time (milli-seconds)	1500	
Output Voltage (Volts)	24	
Status Output Type	0	(0 = Trucharge, 1 = LED, 2 = Analogue)
Diagnostic Flash Sequence	2	
Reverse Alarm	Off	
Pulsed Reverse Alarm	Off	
Diagnostic Alarm	Off	
Brake Disconnected Alarm	Off	
Brake Fault Detect	On	
Brake Light	On	
Push too Fast Threshold	10	
Push too Fast Timeout	1	
Freewheel Enable	Disable	
Inhibit 2 Horn Input Enable	Off	

PGDT S-Drive 120A (ID-no PBxxxxx only)

Speed Settings	Fast	Slow	Motor Settings		
Forward Acceleration (0,1 Seconds)	35	35	Current Limit Max (Amps)	110	
Forward Deceleration (0,1 Seconds)	16	16	Boost Drive Current (Amps)	120	
Reverse Acceleration (0,1 Seconds)	40	40	Boost Drive Time (Seconds)	10	
Reverse Deceleration (0,1 Seconds)	35	35	Current Foldback Threshold (Amps)	80	
Max Forward Speed (%)	100	100	Current Foldback Time (Seconds)	70	
Min Forward Speed (%)	10	10	Current Foldback Level (%)	59	
Max Reverse Speed (%)	25	25	Motor Cooling Time (Seconds)	660	
Min Reverse Speed (%)	5	5	Current Foldback Temperature (Deg C)	50	
Speed Limit Pot Enabled	On		Current Limit Min (Amps)	10	
			Motor stall timeout (Seconds)	0	(Mk ll only)
Operation Settings			Motor Compensation (milli Ohms)	25	
Sleep timer (minutes)	0		Anti Rollback Level	12	
Throttle Invert	Yes		Pull-away Delay (centi-Seconds)	0	
			Slope Factor	900	
Battery Settings			Anti Rollback Velocity	0	
Low battery Flash Level (Bars)	0		Bracking current limit (Amps)	120	(Mk ll only)
Cable Resistance (milli-Ohms)	50		Time foldback bracking current (Amps)	120	(Mk ll only)
Calibration Factor	100		Time foldback speed (%)	100	(Mk ll only)
Low Battery Alarm	Off		Enhanced motor compensation up (%)	130	(Mk ll only)
Trucharge Reset Voltage (Deci-Volts) (MK ll only)	200		Enhanced motor compensation down (%)	150	(Mk ll only)
			Enhanced motor compensation up gain	1	(Mk ll only)
Inhibit Settings			**Factory Settings**	Max	Min
Inhibit 1: Mode	1		Acceleration (0,1 Seconds)	100	1
Inhibit 1: Operation	Latching		Deceleration (0,1 Seconds)	100	1
Inhibit 1: Speed (%)	0		Forward Speed (%)	100	0
Inhibit 2: Mode	1		Reverse Speed (%)	100	0
Inhibit 2: Operation	Latching				
Inhibit 2: Speed (%)	0		**Throttle Settings**		
Inhibit 3: Mode	1		Throttle Type	1	0=Single-ended 1=Wig-Wag 2=Unipolar
Inhibit 3: Operation	Non Latching		Throttle Deadband (%)	15	
Inhibit 3: Speed (%)	0		Throttle Gain (%)	140	
Aux Output: Mode	1		Throttle Operated at Power-up	2	0 = Drive, 1 = Inhibit, 2 = Trip
			Throttle Reference Test	On	
			Iso Test Resistor	Off	

General Settings		
Soft Stop	On	
Brake Time (milli-seconds)	1000	
Output Voltage (Volts)	24	
Status Output Type	0	(0 = Trucharge, 1 = LED, 2 = Analogue)
Diagnostic Flash Sequence	2	
Reverse Alarm	Off	
Pulsed Reverse Alarm	Off	
Diagnostic Alarm	Off	
Brake Disconnected Alarm	Off	
Brake Fault Detect	On	
Brake Light	On	
Push too Fast Threshold	10	
Push too Fast Timeout	1	
Freewheel Enable	Disable	
Inhibit 2 Horn Input Enable	Off	

PGDT S-Drive 90A (ID-no QBxxxxx onwards)

Speed Settings	Fast	Slow	Motor Settings		
Forward Acceleration (0,1 Seconds)	35	35	Current Limit Max (Amps)	60	
Forward Deceleration (0,1 Seconds)	16	16	Boost Drive Current (Amps)	90	
Reverse Acceleration (0,1 Seconds)	40	40	Boost Drive Time (Seconds)	10	
Reverse Deceleration (0,1 Seconds)	35	35	Current Foldback Threshold (Amps)	60	
Max Forward Speed (%)	100	100	Current Foldback Time (Seconds)	70	
Min Forward Speed (%)	10	10	Current Foldback Level (%)	59	
Max Reverse Speed (%)	25	25	Motor Cooling Time (Seconds)	660	
Min Reverse Speed (%)	5	5	Current Foldback Temperature (Deg C)	80	
Speed Limit Pot Enabled	On		Current Limit Min (Amps)	10	
			Motor Stall Timeout (Seconds)	0	(Mk ll only)
Operation Settings			Motor Compensation (milli Ohms)	25	
Sleep timer (minutes)	0		Anti Rollback Level	12	
Throttle Invert	Yes		Pull-away Delay (centi-Seconds)	0	
			Slope Factor	900	
Battery Settings			Anti Rollback Velocity	0	
Low battery Flash Level (Bars)	0		Bracking current limit (Amps)	90	(Mk ll only)
Cable Resistance (milli-Ohms)	50		Time foldback bracking current (Amps)	90	(Mk ll only)
Calibration Factor	100		Time foldback speed (%)	100	(Mk ll only)
Low Battery Alarm	Off		Enhanced motor compensation up (%)	190	(Mk ll only)
Trucharge Reset Voltage (Deci-Volts) (Mk ll only)	200		Enhanced motor compensation down (%)	180	(Mk ll only)
			Enhanced motor compensation up gain	90	(Mk ll only)
Inhibit Settings			**Factory Settings**	**Max**	**Min**
Inhibit 1: Mode	1		Acceleration (0,1 Seconds)	100	1
Inhibit 1: Operation	Latching		Deceleration (0,1 Seconds)	100	1
Inhibit 1: Speed (%)	0		Forward Speed (%)	100	0
Inhibit 2: Mode	1		Reverse Speed (%)	100	0
Inhibit 2: Operation	Latching				
Inhibit 2: Speed (%)	0		**Throttle Settings**		
Inhibit 3: Mode	1		Throttle Type	1	
Inhibit 3: Operation	Non Latching		Throttle Deadband (%)	15	
Inhibit 3: Speed (%)	0		Throttle Gain (%)	140	
Aux Output: Mode	1		Throttle Operated at Power-up	2	0 = Drive, 1 = Inhibit, 2 = Trip
			Throttle Reference Test	On	
			Iso Test Resistor	Off	

General Settings		
Soft Stop	On	
Brake Time (milli-seconds)	1500	
Output Voltage (Volts)	24	
Status Output Type	0	(0 = Trucharge, 1 = LED, 2 = Analogue)
Diagnostic Flash Sequence	2	
Reverse Alarm	Off	
Pulsed Reverse Alarm	Off	
Diagnostic Alarm	Off	
Brake Disconnected Alarm	Off	
Brake Fault Detect	On	
Brake Light	Off	
Push too Fast Threshold	10	
Push too Fast Timeout	1	
Freewheel Enable	Disable	
Inhibit 2 Horn Input Enable	Off	

PGDT S-Drive 120A (ID-no QBxxxxx onwards)

Speed Settings	Fast	Slow	Motor Settings		
Forward Acceleration (0,1 Seconds)	35	35	Current Limit Max (Amps)	110	
Forward Deceleration (0,1 Seconds)	16	16	Boost Drive Current (Amps)	120	
Reverse Acceleration (0,1 Seconds)	40	40	Boost Drive Time (Seconds)	10	
Reverse Deceleration (0,1 Seconds)	35	35	Current Foldback Threshold (Amps)	80	
Max Forward Speed (%)	100	100	Current Foldback Time (Seconds)	70	
Min Forward Speed (%)	10	10	Current Foldback Level (%)	59	
Max Reverse Speed (%)	25	25	Motor Cooling Time (Seconds)	660	
Min Reverse Speed (%)	5	5	Current Foldback Temperature (Deg C)	50	
Speed Limit Pot Enabled	On		Current Limit Min (Amps)	10	
			Motor stall timeout (Seconds)	0	(Mk II only)
Operation Settings			Motor Compensation (milli Ohms)	25	
Sleep timer (minutes)	0		Anti Rollback Level	12	
Throttle Invert	Yes		Pull-away Delay (centi-Seconds)	0	
			Slope Factor	900	
Battery Settings			Anti Rollback Velocity	0	
Low battery Flash Level (Bars)	0		Bracking current limit (Amps)	120	(Mk II only)
Cable Resistance (milli-Ohms)	50		Time foldback bracking current (Amps)	120	(Mk II only)
Calibration Factor	100		Time foldback speed (%)	100	(Mk II only)
Low Battery Alarm	Off		Enhanced motor compensation up (%)	130	(Mk II only)
Trucharge Reset Voltage (Deci-Volts) (Mk II only)	200		Enhanced motor compensation down (%)	150	(Mk II only)
			Enhanced motor compensation up gain	1	(Mk II only)
Inhibit Settings			**Factory Settings**	Max	Min
Inhibit 1: Mode	1		Acceleration (0,1 Seconds)	100	1
Inhibit 1: Operation	Latching		Deceleration (0,1 Seconds)	100	1
Inhibit 1: Speed (%)	0		Forward Speed (%)	100	0
Inhibit 2: Mode	1		Reverse Speed (%)	100	0
Inhibit 2: Operation	Latching				
Inhibit 2: Speed (%)	0		**Throttle Settings**		
Inhibit 3: Mode	1		Throttle Type	1	
Inhibit 3: Operation	Non Latching		Throttle Deadband (%)	15	
Inhibit 3: Speed (%)	0		Throttle Gain (%)	140	
Aux Output: Mode	1		Throttle Operated at Power-up	2	0 = Drive, 1 = Inhibit, 2 = Trip
			Throttle Reference Test	On	
			Iso Test Resistor	Off	

General Settings		
Soft Stop	On	
Brake Time (milli-seconds)	1000	
Output Voltage (Volts)	24	
Status Output Type	0	(0 = Trucharge, 1 = LED, 2 = Analogue)
Diagnostic Flash Sequence	2	
Reverse Alarm	Off	
Pulsed Reverse Alarm	Off	
Diagnostic Alarm	Off	
Brake Disconnected Alarm	Off	
Brake Fault Detect	On	
Brake Light	Off	
Push too Fast Threshold	10	
Push too Fast Timeout	1	
Freewheel Enable	Disable	
Inhibit 2 Horn Input Enable	Off	

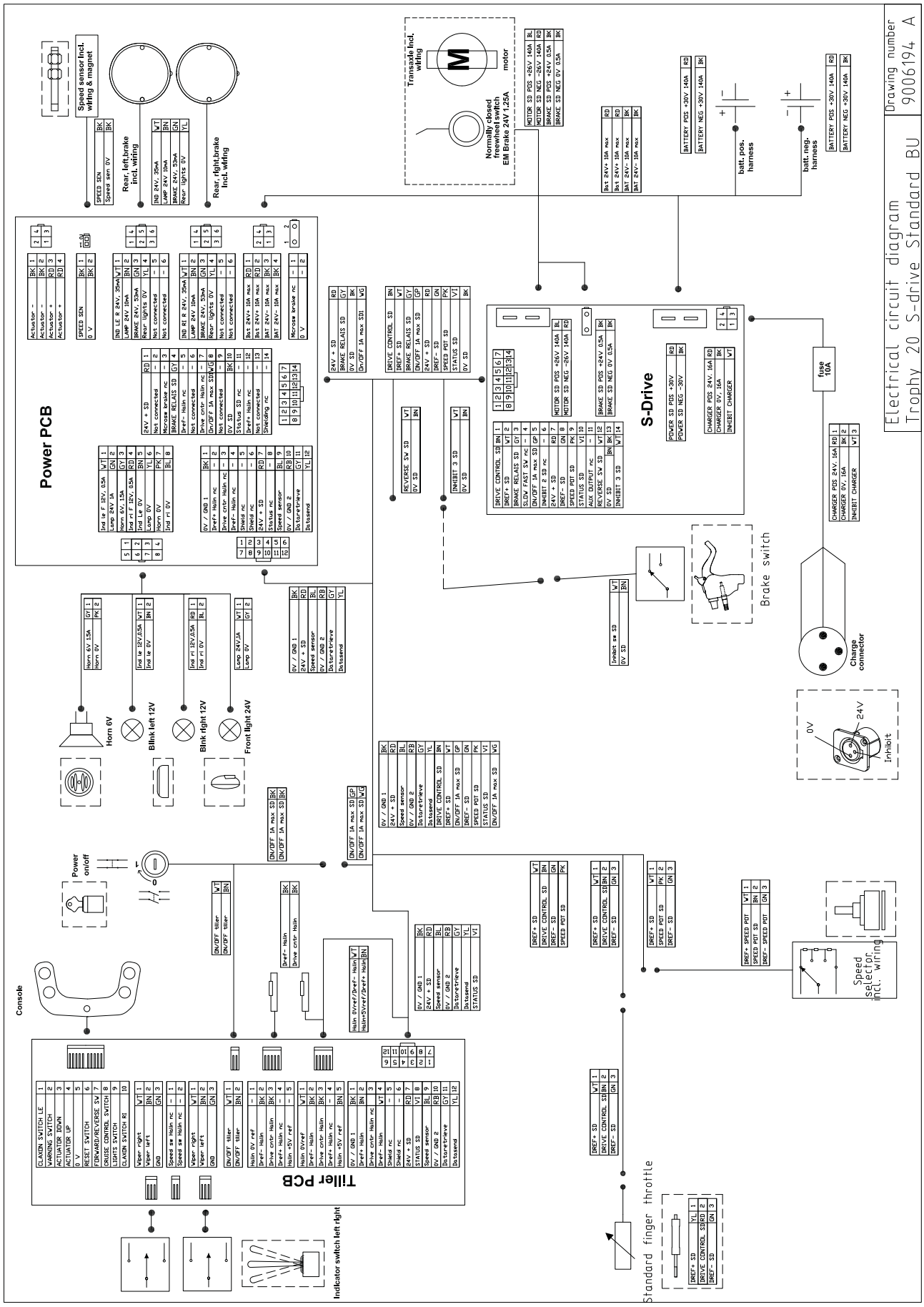
7.4 Data sheet

Description			Remarks
Nominal voltage	24	V	
Current main fuse	50	A	
Max slope percentage	16	%	
Max slope with a start	9° @ 160kg	°	
Motor nominal power	950	Watt	
Gearing ratio (motor gearbox)	4100/195	i	
Wheel diameter front	320x60	mm	
Wheel diameter rear	360x80	mm	
Type of tyre front	12½ x 2¼	-	
Type of tyre rear	3,00-8	-	
Tyre pressure maximum front	2,5	bar	
Tyre pressure minimum rear	3.5	bar	
Maximum dimenstions batteries	L262xW173xH211	mm	
Battery connection type	Anderson	-	
Maximum allowable charger voltage	30	V	
Maximum allowable charger current charger	8 RMS	A	
Maximum battery capacity C20	74	Ah	
Maximum battery capacity C5	63	Ah	
Forces on levers etc.			
Electronic switches	<13.5 [N]		
Drive lever operation	<20 [N]		
Parking brake	<60 [N]		
Connection of charger	<60 [N]		

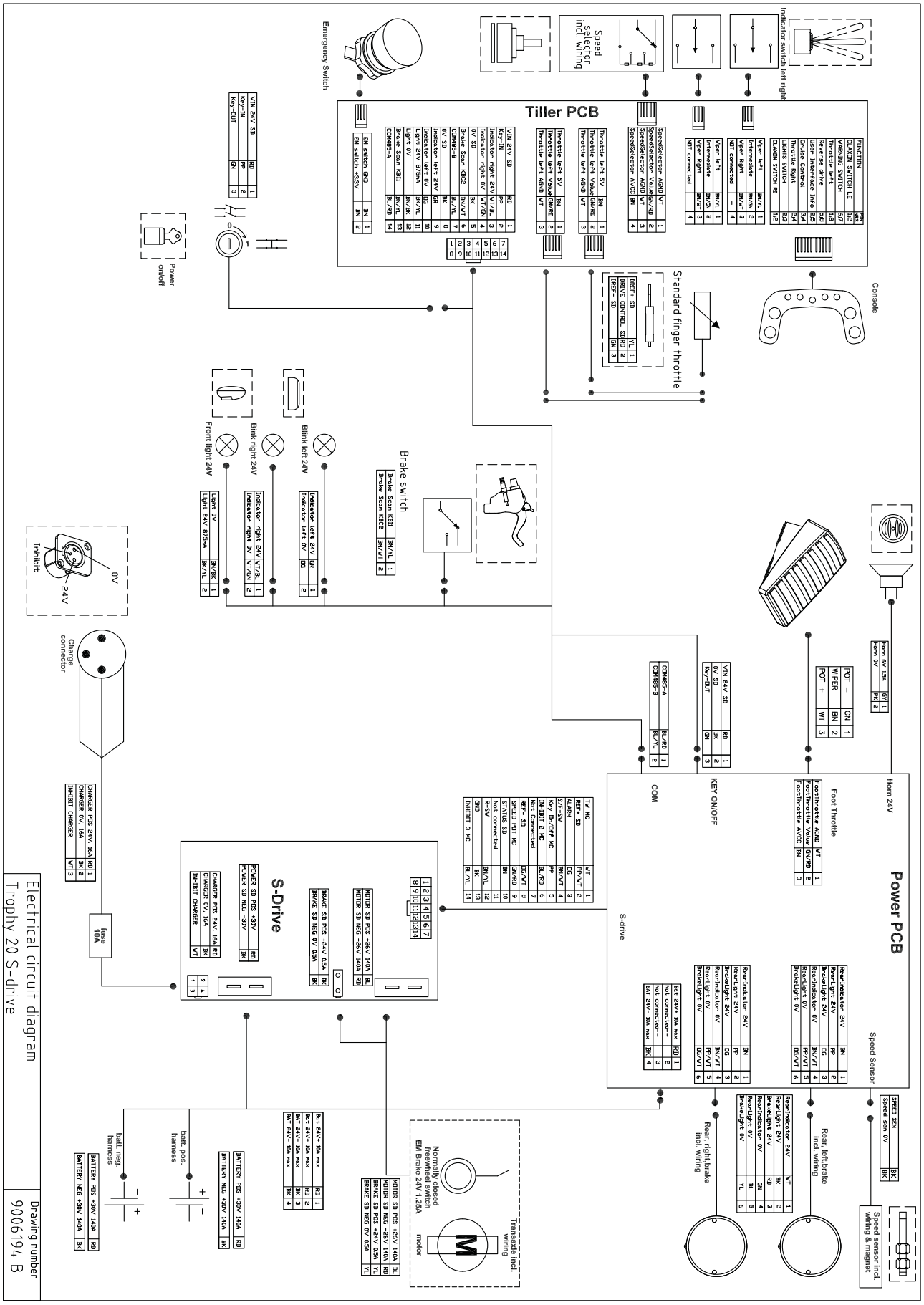
Weight	3W			4W		
bat. size	40Ah	60Ah	74Ah	40Ah	60Ah	74Ah
Frame	70	70	70	80	80	80
Chair	19	19	19	19	19	19
Basket+	2,4	2,4	2,4	2,4	2,4	2,4
Batteries	28,8	38,6	48,6	28,8	38,6	48,6
Total	120	130	140	130	140	150

7.5 Electrical diagram Trophy 20

(ID-no PBxxxxx only)



(ID-no QBxxxxx onwards)



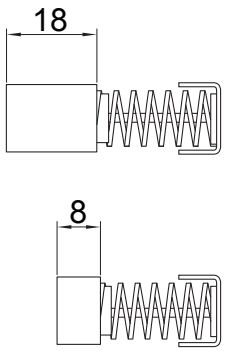
7.6 Service information transaxles

Regular preventative service checks are important to verify the condition of the parts and enables to replace them at the right time. Therefore see the new service check instructions below.

Service checks instructions:
Check if dimensions motor brushes satisfy minimum dimensions as indicated in the illustrations, accordingly to the table below.

Part	Plan service check
Motor brush	At least once a year or every 2000 km

Clean the collector on the anchor of the motor with pressed air from dust.



New brush – maximum (18 mm) and minimum (8 mm) dimensions.

8 Warranty

8.1 Provisions of warranty

Warranty
In the warranty and liability provisions the following terms are defined as follows:
- **Product**: The manual or electric wheelchair or scooter manufactured and supplied by Handicare.
- **Customer**: The person who directly obtains a product from Handicare.
- **Dealer**: The person who supplies a product obtained from Handicare to third parties.
- **User**: The person who uses a product manufactured by Handicare.

Irrespective of what has been determined concerning warranty conditions in the general terms and conditions applicable to the product, the following shall in any case apply with regard to the warranty:

1. Except insofar as described otherwise in the provisions below, Handicare guarantees the product for its suitability for the purpose for which the product is intended - all of these points as described in this manual - and for the quality of the material of which the product is made and the manner in which the product is manufactured.

2. Repairs or replacement of parts of the product that may be necessary as a result of faults that are based on qualitatively faulty material or manufacturing errors shall be carried out free of charge, as long as such faults occurred within one (1) year of the date of delivery of the product to the Customer. The parts to be replaced must be shipped post-paid to Handicare. Disassembly or assembly of these parts shall be at the expense of the Customer. Therefore, the following cases are not eligible for free repair or replacement as meant above:
   - The repair or replacement that is necessary in connection with faults that arise after one (1) year after the date of delivery of the Product to the Customer;
   - The repair or replacement that is required in connection with faults due to improper or careless use of the Product or that are based on the Product being used for another purpose than the one for which it is intended, in which regard it applies that if the Customer is a Dealer, this Dealer will indemnify Handicare against possible claims from Users or other third parties for faults based on an incorrect or careless use of the Product;
   - Parts that are subject to wear, and the need for repair or replacement of the parts are the actual consequence of normal wear. These can include, but are not limited to, tyres, shrouds, arm-pads, seatings etc.

3. Irrespective of that stipulated under 2, it applies as far as an electric Product is concerned that with regard to the battery that forms part of the Product warranty is only given in case of faults or non-functioning of the battery that are demonstrably the direct consequence of material or manufacturing errors. A fault or non-functioning of the battery as a result of normal wear is not covered by the warranty as meant in these warranty stipulations. Similarly not covered by the warranty are faults or non-functioning that are the consequence of improper or unprofessional use of the Product or the battery that is part of the Product, including the incorrect charging of the battery and the failure to carry out timely and good maintenance, in which context it also applies that if the Customer is a Dealer, this Dealer will indemnify Handicare against possible claims from Users or other third parties that are based on the above mentioned improper or unprofessional use of the Product or the battery that is part of the Product. Handicare does not guarantee batteries provided by dealers or purchased by the customer.

4. The warranty conditions as mentioned in above stipulations in any case become null and void if:
   - The guidelines of Handicare for the maintenance of the Product are not, or insufficiently, followed;
   - A necessary repair or replacement of parts is based on neglect, damage or abuse of the Product or a use of the Product for another purpose than the one for which it was intended;
   - Parts of the Product are replaced by parts of another origin than those used by Handicare and/or parts of the Product are replaced without the permission of Handicare.

5. The warranties as mentioned in stipulations 1 through 3 also become null and void if what is involved is re-used by a new user within the warranty period and that such re-use necessitates adaptations to the product and those adaptations are carried out without the instructions and/or at the order of Handicare.

6. To retain rights under the warranties delineated above, the Customer must, in case of damage or other calamities, as rapidly as possible contact Handicare and inform them as fully as possible. The possibility of taking recourse to the above-mentioned warranty conditions becomes null and void for the Customer in any case after 20 workdays after the claim situation or the calamity arises that was the reason for the recourse to the warranty.

7. The replacement of a part or the repair or the reconditioning of the Product within a current warranty period does not extend the warranty period.

8. Handicare gives no warranty on repair to or reconditioning of the Product carried out other than under order of and/or at the instructions of Handicare. If repairs and/or reconditioning are executed by or on behalf of a Customer, the Customer indemnifies Handicare with respect to the claims of third parties who result, in the broadest sense of the word, from such repairs or reconditioning.

8.2 Statement of liability

Irrespective of what is determined regarding liability in the general conditions applicable to the Product, with regard to liability in any case the following applies:

A. Taking into consideration the following stipulations, Handicare only accepts liability for loss due to death or physical injury that is the result of a defect in the Product for which Handicare is responsible and for damage to another object that is the private property of the user of the Product, as long as said loss is the direct result of a fault in the Product.
B. Handicare accepts no other or further liability than delineated under 1. In particular Handicare accepts no liability for consequential damage, in any form whatsoever.

Used scooters and the environment

If your scooter is no longer needed or needs to be replaced, it can usually be taken back by your dealer. If this is not possible, please contact your local authorities for the possibilities of recycling or an environmentally friendly way of disposing of the used materials.
For the production of the scooter several plastics and metals have been used. The scooter also contains electronic components that must go to electronic waste. Used batteries belong to chemical waste.

Version	Page	Draw	Changes
2011 V1			
2012 V1	12	01	Changed article number and description 1263 Ball-headbearing 6004 ZZE into 9000493 Ball-head bearing 6004 2NSE
	14 / 38	03	Changed article numbers 9004144 and 9004145 into 1014661 and 1014662
	14	03	Added position 7, 00001.1463 Sticker tire pressure 3,5 Bar
	18	05	Changed article number 9004438 into 9006110
	18	05	Changed article number 9004432 into 9006111
	27	-	Added options, position 2 till 13
	85	-	Changed driving program S-drive 120A
2012 V2	3-4	-	Changed table of content
	17	04	Changed article number 9000610 into 9006559
	18	05	Changed article number 9004435 into 9006106
	19	05	Changed article numbers 9000496 and 9004304 into 1015179 and 9007223
	20	06	Changed article number and description 9005147 Battery harness into 9006563 Battery harness fused 60A
	20	06	Added position 1b, 9006564 Battery harness fused 100A (for Alpine transaxle)
	20	06	Changed article numbers 9006097, 9006101 and 9004430 into 9006562, 9006561 and 1002558
	21	07	Deleted article number 9005628, is no spare part
	22-23 / 24	08/09	Changed article numbers 9004443, 9004446, 9004449, 9004452 and 9004455 into 1015363, 1015364, 1015365, 1015366 and 1015367
	27	4.3	Changed price and article number 1012456 into 1015401
	46	-	The article numbers of the standard and heavy duty transaxle were reversed. This is corrected.
	67	-	Changed article numbers 9004443, 9004446, 9004449, 9004452 and 9004455 into 1015363, 1015364, 1015365, 1015366 and 1015367
	73	-	Changed article number 1012456 into 1015401
2012 V3	5-8		Textual changes in Introduction and Safety chapters
	11		Updated table of content (added drawing number 5b and 6b)
	13	02	Changed article number 90056891 into 9005689
	16	04	Changed article number 9006230, 9006125 and 9000685 into 9006130, 9006544 and 9007360
	17	04	Changed article number and description 9004162 Gas spring 200N into 9007359 Gas spring 300N
	18	05a	• Changed QTY of position 10 and 21 • Deleted position 7 (stop switch) • Changed description of position 12 (article number 9004331) • Changed article number of position 27 (1012535 into 9007365) • Added position 34 and 35: 9004641 Throttle harness and 1015323 Cable clips
	20	05b	Added exploded view and spare part list Console, printed circuit board and throttle control according electronics ID-no QBxxxxx onwards
	22	06a	• Changed position 1 (90005147) in 1a and 1b, 9006563 Battery harness 60A and 9006564 Battery harness 100A • Changed article numbers 9006562 and 9006561 into 9006097 and 9006101 • Deleted article numbers 9004513 and 9004430 and added article numbers 1015385, 1015386 and 1002558 instead • Changed price of article number 9004503 • Changed position of article numbers 1007078, 9006096, 9006193, 9005911 and 00000.4036 • Added article number 9002752, Set battery connection covers
	23	06b	Added exploded view and spare part list Wiring, electronics and batteries according electronics ID-no QBxxxxx onwards
	24	07	• Changed position 14 into 9006157 Ring seat post cover • Changed description article number 1012520 into Assy seat post Captain seat incl. nylon bearing • Changed article number and description 00000.3723 Button head screw M6x8 into 00000.3716 Button head screw M6x16
	25	08	Changed position 3 (9006094) in 3a and 3b, 9006094 Indicator 12V (ID-no PBxxxxx only) and 9003478 Indicator 24V (ID-no QBxxxxx onwards)
	26	08	• Changed article number 9004127 into 1015454 • Added position 31, 9005802 Screw EJOT K40x12
	27	09	Changed position 3 (9006094) in 3a and 3b, 9006094 Indicator 12V (ID-no PBxxxxx only) and 9003478 Indicator 24V (ID-no QBxxxxx onwards)
	30	4.3	• Changed description article number 1008572 in Assy foot throttle (ID-no PBxxxx only) • Added article number 9007499, Assy foot throttle (ID-no QBxxxxx onwards) • Article number 9000703 (Front bag) was mentioned twice, delete once • Added article number 1015507, lap strap with roll-up for Master Seat

Version	Page	Draw	Changes
	31/32		Added 'annual inspection' table
	31-33		Textual changes in chapter 5
			Updated several service instructions
	82	5.5	Added paragraph 5.5 Display menu settings
	84		Deleted paragraph 6.1 and 6.2
	90-91		Added controller settings overview 90A and 120A according new electronics (ID-no QBxxxxx onwards)
	94		Added Electrical diagram according new electronics (ID-no QBxxxxx onwards)
2012 v4	86-87	7.2	Updated specifications
	88-91		Changed S-Drive settings into Mk.